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FIREMEN

SIXTY-SECOND YEAR • NATIONAL FIRE PROTECTION ASSOCIATION

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Firemen

Volume 25 — Number 1

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Cover Photo

Sometimes, the fact that a fire station burns becomes a matter of quasi-humorous comment in the newspapers. To the fire department, however, such an experience is a costly and burdensome problem, as it probably was when Norfolk, Virginia's Station No. 2 became involved last month.

Unfortunately, many fire departments have stations that were built 50 or more years ago. They house motor fire apparatus and perhaps have dormitory facilities for the men. Such buildings can be prime targets for fire destruction. Often they feature a great deal of wooden construction, large attic space where records and other quick-burning material may be stored, and may have dangerous paths for fire travel, such as slide pole openings and unprotected stairways.

There are, of course, situations which can easily lead to fire in a station. If the men are preparing a meal when the bell hits, it is possible that the stove could be left unattended and ignite drapes or other nearby combustibles. Paints, oils and other flammable liquids used or stored in the fire station add to existing hazards.

It is not surprising, therefore, that a number of serious fires have occurred in fire stations. Statistics of the NFPA Fire Record Department show that at least 10 persons have died in fire station fires in the past 25 years. Good housekeeping and sensible precautions against fire undoubtedly have kept fire station fires to a minimum, for fire departments are no more immune to fire than the average person, business or industry. Particular attention to sound practices of fire prevention is needed in the older fire stations.

As for planning new stations, and incorporating good construction materials, sprinklers and fire detection equipment, we suggest a reading of the article on page 17 of this issue.

Fire Deaths and Losses Increase

Fires caused 11,300 deaths and $1,275,000,000 loss in the United States in 1957, according to preliminary estimates by the NFPA Department of Fire Record. Corresponding preliminary Canadian 1957 estimates are 600 deaths and $135,000,000 loss. In 1956 there were an estimated 10,600 deaths and $1,231,576,000 property damage from fire in the United States, and 601 deaths and $129,780,000 loss in Canada.

The 1957 United States property damage loss of $1,275,000,000 includes $1,050,000,000 loss to buildings and contents and $225,000,000 loss in aircraft, motor vehicles, forest and other nonbuilding fires. Corresponding figures for 1956 were $1,016,000,000 and $215,576,000.

Fire Prevention Contest

Judging of the 1957 NFPA Fire Prevention Contest was completed in December. Winners will be announced this month in the news services throughout the United States. The February issue of FIREMEN magazine will contain its annual special feature story on the Contest winners and the fire prevention activities that won the top awards.

Judging of approximately 1,300 municipal, industrial, government and military entries was accomplished by an impartial board of judges representing the United States and Canada. Included on the board of judges were A. Leslie Ham, manager, Dominion Board of Insurance Underwriters, Montreal; A. L. Kirkpatrick, manager, Insurance Department, U. S. Chamber of Commerce; N. M. Knowlton, president, Holyoke Mutual Fire Insurance Company; D. L. Morrell, general manager, Canadian Chamber of Commerce; B. Richter Townsend, secretary-manager, International Association of Fire Chiefs, New York; and Edward C. Wood, president, Imperial Tobacco Company of Canada, Ltd.

A YEAR GONE BY . . .

Anything can happen on the fireground! Members of fire departments everywhere know that they must be prepared for a quick tragedy, the unexpected demand for physical exertion and the mustering of courage and ability to meet crises. The tensions that firemen develop from day to day are caused by past experiences and by the anxiety brought about by knowledge of what can happen in fire fighting. The pictures on these pages are a sample of fireground action during each month of 1957. They reflect only a small portion of the severe problems of fire combat, rescue, frustration and tragedy which fire fighters met in more than a million fires last year. Undoubtedly, they will undergo similar experiences in 1958. Their ability to come through tough fire situations rests upon their innate courage and the skills acquired through practical experience, sound training and good understanding of fire behavior and fire department operations.

January — Fairbanks Alaska. A three-year-old girl drops five stories from an apartment building into a net held by fire fighters. Her mother jumped later and suffered a broken back. (*Wide World photo*)

February — Los Angeles, California, fire fighters, wearing filter masks, had trouble with this large loss fire, which involved plastic belting materials and which subsequently spread throughout a three-story brick building. First floor was fully involved when the first fire companies responded to a alarm. Estimated fire loss was $900,000. (*Los Angeles Examiner photo*)

April — A tough, smoky fire in Jersey City brought three-alarm response. Three firemen were injured, and loss exceeded $500,000. (*Photo by B. J Stevens*)

May — In severe drought conditions 40 to 50 brush and wood fires burned simultaneously in Massachusetts, bringing full-scale fire department response and Civil Defense operations. Rain came to ease the problem. Here National Guard troops move to a fire line on the double." (*Wide World photo*)

June — In Buffalo, New York, fire fighter George G. Wailand prepares to give resuscitation to a two-year-old girl. She was overcome by smoke and was one of six persons rescued from an apartment building. (*Photo by Cliff Preisigke, Buffalo Courier*)

March — This back draft explosion in Billings, Montana, knocked down several fire fighters, but fortunately they escaped without serious injury. (*Carps' photo*)

July — Volunteer fire fighters move in on a million-dollar blaze that destroyed 14 buildings in downtown San Rafael, California. *(Wide World photo)*

October — Los Angeles Fire Department members stationed at International Airport laid a 1,680-ft. blanket of foam on the runway to permit this United Airlines DC-7B plane to land safely. Crew was unable to extend right main landing gear, and plane circled for more than two hours while foam blanket was being prepared. Aircraft skidded about 1,500 ft. and small fires started in one engine but were quickly controlled. None of the 11 passengers was injured. *(Wide World photo)*

August — In Santa Rosa, California, this auto parts store fire brought mutual aid response to Santa Rosa from the Roseland Fire Protection District and the Bellevue Volunteer Fire Department. *(United Press photo)*

November — Niagara Falls fire fighters remove one of the bodies from a tenement structure destroyed by fire. At least 17 persons died, and a number were injured when flames spread rapidly through the wooden structure. *(Photo by G. Butler)*

September — Harrisonburg, Virginia, fire fighters lost this pumper in a brush fire. The vehicle stuck in soft ground and was fully involved before protecting hose lines could be mustered. Replacement of the truck and equipment has been estimated at $28,562. *(United Press photo)*

December — A spectacular but relatively harmless fire started when a leak from a low-pressure (less than one-half pound) gas main was ignited in Times Square, New York City. Fire fighters gained control with hose streams during a heavy snowstorm. *(Wide World photo)*

Fire Department Use of

AUTOMATIC SPRINKLER SYSTEMS

From an address at the NFPA Fall Conference, Richmond, Virginia, by T. Seddon Duke, President, Star Sprinkler Corporation and Past-President of NFPA.

A STRONG and most important alliance in the field of fire protection today resides in the relationship between the fire services and the automatic sprinkler industry. As sprinklers have been called "the first line of defense against fire" and "the fireman's best friend," so the automatic sprinkler industry regards fire departments as most important allies.

In many localities today industrial parks and other locations have been set aside for what is termed "light" industry. However, fire loads of combustibles can be heavy, resulting in serious fires. Such industry is of great value to the community inasmuch as it provides employment and lightens the tax burden on all the residents of the borough. Automatic sprinkler systems are of tremendous value and importance to volunteer fire companies in such communities. These fire companies were never created to fight fires of great magnitude. But knowledge of sprinkler systems can help cut down the nation's increasing fire losses. To assist fire fighters in this respect, here is a three-point program to follow to get the best assistance from sprinkler systems:

1. Before the fire or in the inspection phase.
2. During the fire or in the fire-fighting phase.
3. After the fire.

Before the Fire

1. Know what properties are protected by automatic sprinklers within your fire district. Familiarize yourself with the hazards within the plant. Work out a plan with the plant manager so the fire department can be kept informed of changes, new hazards and plant shutdowns.

2. Know where control valves to the sprinkler system are located. Check the height of storage within the plant, and if the materials will interfere with proper distribution of water for the sprinklers, this should be called to the attention of the management.

3. Know where the fire department steamer or siamese connections are located. See that they are not obstructed and are in proper working order.

4. Sprinklers are designed to open automatically but not to close automatically. Fire apparatus should be equipped with salvage covers and several standard automatic sprinkler shutoffs which close off the individual sprinkler head at the ceiling. The apparatus should also carry automatic sprinklers that function at various temperatures. These are identified as follows:

165° — Ordinary Brass Coloring
212° — Frame arms painted White
286° — Frame arms painted Blue
360° — Frame arms painted Red

Care must be exercised in installing these sprinkler heads. You can appreciate that a lower temperature head installed in a high temperature area could cause serious water damage when heat causes the head to operate unnecessarily. If in doubt about temperatures, have in the apparatus several ½-in. Globe Valves made tight with a short ½-in. pipe nipple. This Globe Valve and nipple can be screwed into the ½-in. outlet from which the fused sprinkler has been removed and the system put in working order until the heads can be secured. In addition to the spare sprinklers, the Globe Valves and nipples and the shutoffs, it is well to carry several wooden wedges of soft wood. In an emergency, these can be used to close off the opening from the sprinkler head, by driving the wedge in between the arms of the automatic sprinkler.

"In six decades, more than one-hundred billion dollars worth of American property and millions of lives have gained the protection of automatic sprinklers. . . . Over the past thirty years sprinklers have controlled 96.2 percent of almost 59,000 fires in sprinklered occupancies, tabulated and reported by the National Fire Protection Association. . . . We in the automatic sprinkler industry realize that the human element figures so strongly in this 3.8 percent inefficiency that only a national inspection service, better maintenance, and more widespread use of central station automatic sprinkler supervisory service can help close the gap."
— T. Seddon Duke.

During the Fire

1. Immediately upon arrival connect to the siamese connection in order that water supply to the system can be continued at pressure and volume.

2. Don't rob sprinklers by taking pumper suction for hose streams from yard system hydrants. Use public hydrants or open bodies of water when available.

3. If possible, check to make sure that all control valves are open.

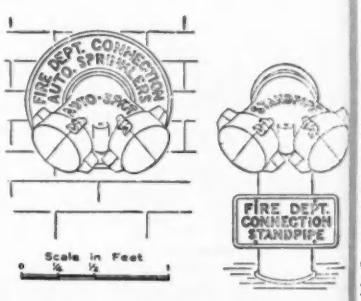
4. If the sprinkler system has a gravity tank and there is a department supply inlet, a hose line from the pumper should be connected to this connection and water supplied to the tank in the necessary amount.

5. Know how to identify a post indicator and other control valves and be sure that they are open.

6. Do not close any control valves until the fire is extinguished or until you are certain the fire is under control; then station a fireman at the control valve so that it can be opened immediately if the fire is rekindled. A large part of the 3.8 percent of unsatisfactory performance attributed to sprinklers comes from closing valves too soon.

After the Fire

It is imperative that the automatic sprinkler systems be put back in service immediately. Naturally, it would be desirable if the plant fire protection engi



These siamese connections should be supplied with water during fire condition

neer, the superintendent or the maintenance man were available to care for the system. However, in their absence, you, the fire fighter, must be prepared to put the system in operation. It is most necessary that you know the type of system within the plant. Dry systems have the overhead system filled with air. If the system is of the dry type, the clapper must be returned to its seat, the valve cover bolted in position, the proper amount of priming water added and then the proper amount of air let into the overhead system. Only after these steps have been followed can the water from the underground system be turned on. Whether the system is of the dry or wet type, the valve seats should be thoroughly cleaned. Instruction cards or charts will be found at the valve and the directions should be followed carefully.

In general, if the following items are checked, the system will be properly restored to operation:

1. Close the main control valve supplying the water to the system — first checking that the fire is completely extinguished.

2. Drain the system. This is done through the 2-in. main drain valve at the base of the sprinkler riser.

3. Replace the fused automatic sprinkler heads. If you have any doubt concerning the proper temperature of the sprinklers, use the ½-in. Globe Valves and close nipples until sprinklers of proper temperature can be secured.

4. Close the 2-in. drain valve and slowly open the main control valve. This restores the sprinkler system to operation.

If the above procedure cannot be followed, it is recommended that a fireman be stationed at the building to see that the owner or tenant properly restores the sprinkler system to operation. If these simple procedures are followed, both the fire services and the automatic sprinkler industry can be assured that the job to which they have dedicated themselves can be accomplished to a greater degree than has ever been possible in the past.

SOME States, through legislation, show high regard for safety to human life from destruction by fire. Louisiana, Kentucky, Georgia, California, Connecticut, Iowa and the State of Virginia are outstanding examples. Other States do a magnificent job without strong legislation. The individual fire marshals within these States and cities deserve great credit for their enforcement efforts, for strong enforcement is the answer to prevention of loss of human life from fire.

No mention of the use of automatic sprinkler systems by fire departments, or by cities, would be complete without the story of Hartford, Connecticut.

Back in 1944, Henry G. Thomas, Hartford's Fire Chief, and William J. Ennis, then Building Supervisor, did some worrying about possible loss of life in Hartford's hotels, rooming houses, convalescent homes, homes-for-the-aged, hospitals and schools. Chief Thomas, now NFPA's First Vice-President and past-President of the International Association of Fire Chiefs, has, since those early days, carried the message of sprinkler protection and the Hartford story throughout our country.

Within the city limits the population is 180,000 — in the metropolitan area, population is approximately 500,000. Hartford has approximately 428 sprinkler systems. Of these, 25 are in hotels; 17 in large rooming houses; 4 in hospitals; 9 in convalescent homes; 8 in homes-for-the-aged; 14 in public schools; 5 in parochial schools; 6 in colleges; 13 in theaters and 41 in office buildings. Somewhere along the line, someone must have given thought to the value of continuance of pay checks since there are 81 sprinkler systems in mercantiles; 95 in manufacturing; 62 in warehouses and 18 in repair garages. The automatic sprinkler systems are complete installations — installed in accordance with NFPA standards. All have outside fire department connections for secondary water supply and over 50 percent are supervised either by A.D.T. central station automatic sprinkler supervisory service or directly connected to the municipal fire alarm. All systems are regularly inspected and public school buildings have an annual contract with a sprinkler company for check and inspection.

Persuasion has been a major factor in bringing sprinkler protection to management. All of these sprinkler systems are required to have an outside siamese steamer connection. Hartford's water supply for the fire service is a joy! Static pressure is between 80 and 115 pounds. The second hose company due in to a fire in a sprinklered building connects two lines of 2½-in. hose to the siamese; in the downtown or high-value area, three 3-in. lines are used. Height of fire and area involved determine pump pressure, usually 120 to 150 pounds.

Fire fighter inserts sprinkler stopper to cut off flow of water.

Everything we have advocated concerning the use of automatic sprinklers by fire departments is done in Hartford, and is included in Hartford's standard fire department training program. What Hartford has done to preserve human life from destruction by fire can and should be done by others.

These accomplishments by the City of Hartford vividly portray the following important facts:

Sprinklers will enable your fire department to do a better, more efficient job. They are your first line of defense against fire. They reduce the danger to your own life — they are present at the fire's inception and they go to work immediately, placing the water only where fire actually exists.

(Right) Photo of indicator post valve. Control valve must be open so water will be available for sprinkler system.

WORKING WITH THE LADDER COMPANY

Tips for officers and men of fire departments who man the "big stick" and perform duties of the ladder company.

By Warren Y. Kimball, Manager, NFPA Fire Services Department and Editor, FIREMEN Magazine

Part I

THE ladder company is the "workhorse" of the fire department. A fire department large or small that does not have good ladder or "truck" company service is only half a fire department and often less than that. Many small fire departments allow themselves to be needlessly penalized in their gradings due to lack of adequate ladder service. I always favored the Wisconsin law that required both hose and ladder service in small communities. Even if all fires were in one-story buildings or in the basement of such buildings, the "truckies" or laddermen would still have more than enough to do. In a sense, an experienced fire fighter could fairly rate the effectiveness of a department's operations by ignoring the engine companies (like the poor they are always with us) and concentrating on the ladder service.

As one big city chief pointed out recently when we were discussing this subject: "The engine company always works together as a team. The truck company men must be capable of using individual initiative and judgment. The truck company officer frequently makes an outstanding chief officer for he sees the fire in its broad overall aspect. The engine company man may only see what is going on at the point where his line is working. The ladder or truck officer must provide service for the entire fire: rescue, ladders, ventilation, forcible entry, opening up, mask work, salvage, breathing equipment, and often will run a line, too."

Years ago the writer served on a ladder company in a department that had five engine or hose companies. As the only ladder company, it took all building fires and box alarms, leaving any "bushwacking" to the engine companies which responded to first alarms only in their own first alarm districts.

The Boston Fire Department is justly proud of a ladder company service second to none. Its 30 well-manned ladder companies provide the heaviest concentration of ladder service in the world. Every first alarm for a building fire, even in residential districts, brings at least two ladder companies to provide coverage for both front and rear. Very soon after coming to the NFPA Executive Office in 1928, I was provided quarters in one of the busiest fire stations and responded and worked nights with the department over a considerable period of time. It did not take long to find out that the success of any serious fire fighting operation was, to a large degree, dependent upon ladder company support in opening up, ventilation and ladder work. The Boston department raises aerials at fires more than 1,600 times a year, and ladder companies raise over 5,000 ground ladders totalling well over 160,000 ft. a year.

Now, while the engine company's work is pretty well defined — "Get a line up the stairs" or "over the fire," etc., ladder company work is not, thus placing a greater burden on the truck officer. His first job, of course, is to see that every occupant is out of the building. Life safety cannot be left to chance but must be systematic. His men must be well trained in rescue and search techniques. He must know where panic-stricken children and confused older persons will be found. He must be expert at working in a mask to aid building occupants and to help advance lines. The truck officer must also be capable of making a quick size-up of a building on fire. He must note where to get in and how to get out. He may not have the protection of a hose stream. The officer must know where his men are and must always be able to account for them. If they are not busy, they must be available waiting for the next order to assist.

In sizing up the fire, the truck officer estimates its location, severity and possible extension. He reports promptly to the chief in charge for any special orders, but generally has plenty to do. Good truckmen never enter a building empty-handed but are assigned in advance to carry an axe, rake (plaster hook), Halligan bar or other forcible entry tools and so are able to open the way for men with the lines. If a door is locked or a window is barred, the good truckman has anticipated the problem and is opening up ahead of the engine company. When a ceiling must be pulled or a partition opened, the truckman is there with his tools. This permits the engine companies to devote their entire energies to extinguishment and results in faster advancement of lines. Where available, one or two laddermen should be assigned to work with each engine company.

And, of course, every fire building must be laddered, and that means well laddered. Such requirements should be anticipated by the

ladder officer. If the fire is in his first alarm district, or if his company responds on the first alarm, he must see that the building is promptly laddered. In departments where only one ladder truck responds, this will mean laddering the rear and any accessible sides as well. Ladders must be placed first for saving life, second for ventilation and third for access and advancement of hose lines. Where lines are to be advanced over ladders, it is imperative that ladders be securely dogged so that they cannot slip or fall. Some departments do this with a ladder rope. Boston uses a metal dog chain with an attached spike driven in by a hammer.

WHERE no rescues have to be made immediately, the first ladder should be to the roof or at least over the fire for ventilation. The truck officer will have at least one man on each shift on duty assigned to "opening up." Usually, with a tractor-drawn aerial ladder, this will be the tillerman, and where possible the aerial should be used for this purpose. The officer should select a man of good judgment who is sufficiently experienced to know when and how to open up, because this man will largely be on his own. The man will take with him an axe and plaster hook. On a flat roof structure he will open the skylights (lifting off if possible) if there is any smoke problem. Large skylights may require more than one man. Breakage should be avoided, if possible, but fire fighters know that all the glass in an average building can be replaced at much less cost than the damage resulting from even a small extension of fire or smoke.

Following roof ventilation, or in lieu of it when conditions warrant, the ventilation man or men will start at the top floor and open windows down from the top, removing drapes, curtains and other obstructions to movement of air. Where it is necessary to open a roof deck, he will make an opening large enough to be effective. This is done under the direction of the ladder officer who knows that one good opening, properly located, is of far more value than several smaller ones, and is less costly to repair. The ventilation man uses the plaster hook or pike pole to probe the opening to make sure that no obstruction is blocking the ventilation. He makes certain that there is a clear and adequate channel for ventilation down to the fire area. If there is not, he reports the situation to his officer and takes steps to correct the deficiency.

If the company carries power-operated smoke removal equipment, the ventilation man must use it quickly and effectively. The ladder company officer will indicate where he wants smoke removed and when he wants fresh air blown in. Often several blowers must be used either in relays or at several points of vantage.

A good laddering job at any working fire consists in placing the proper ladders to each floor above grade and to the roof at both front and rear as well as at the sides. Any seriously exposed building must also be laddered. A good ladder drill for many years has been the practice command, "Ladder the building!" As only the long extension ladder with poles requires a full crew, the ladder company splits into teams to cover front and rear, assuming only one ladder company is responding. Ladders are placed to all floors and to the roof of a three- or four-story building in this drill.

A good ladder officer knows how to make the best use of the ladders on his apparatus. Unless needed for immediate rescue or fire fighting on the upper floors, his aerial will generally cover the roof in front. The long pole ladder or ladders (45- to 55-ft.) will cover the rear. The two 35-ft. extensions will reach the third floor or the roof of most 2½- and 3-story buildings, and for some modern buildings having low ceiling heights these ladders may reach fourth floor windows. Some departments use 28- or 30-ft. straight wall ladders for reaching windows on the third floor or for many roofs. The standard ladder complement as recommended by NFPA Standard No. 19 — "Specifications for Motor Fire Apparatus," provides: one 50-ft. extension ladder with poles, two 35-ft. extensions, one 25-ft. straight ladder, one 24-ft. extension, one 20-ft. roof ladder and a 14-ft. extension ladder, for a total of 219 ft. Many departments as shown in the NFPA ladder truck survey (FIREMEN for July, 1955) carry considerably more ladders on each truck. Many carry folding ladders and "pompier," or scaling ladders. The small folding or scuttle ladders and "Baby Bangor" extension ladders are among the important tools that truckmen carry when they go into a building. These are needed to provide immediate access through an attic and scuttle holes to reach stock and machinery.

The good ladder company officer inspects his district with the duties of the truck company in mind. His first thought should be of the life hazard — how will I get the people out? When he looks at a building he should be thinking about what ladders will be needed to reach the various floors. How will I get ladders to the rear? Can I get a truck in there? What is the ladder problem in areaways, courtyards, alleys? What is needed in rooms with high ceilings or in auditoriums? What jobs will get priority? What special types of ladder raise will be required? Are there overhead obstructions? What sort of ground support or footing is there for the ladders? Are there special problems due to grades?

The ladder officer makes certain that engine company men in his station who may be detailed to the company, or who may have to help out with ladders at hotel and institution fires, understand his plans and know the life safety problem involved. On target risks, he works closely with engine company officers in advance, so that they will know where lines will be needed to cover rescue and ventilation problems and so that he will know their ladder requirements. A good plan is to have engine crews participate in truck company drills and vice versa.

(To be continued)

FIRE DEPARTMENTS IN MIDWESTERN STATES!

MAKE PLANS NOW TO ATTEND THE

63rd NFPA ANNUAL MEETING

MAY 19–23, 1958

PALMER HOUSE CHICAGO, ILLINOIS

SPOKANE, WASHINGTON, REPORTING:

PROBLEMS, PLANS and ACTIONS

Chief W. A. Dunham of the Spokane, Washington, Fire Department submitted this report at the request of the editors of FIREMEN Magazine. It outlines the problems, plans and progress of the Department in a two-year period beginning January 1, 1956, and presents a good example of what a municipal fire department can accomplish through diligent public relations.

The Problem: Sharp increase in population and building, with corresponding increase in fires. Inability, due to limited finances, to increase Fire Department manpower in the same ratio.

The Question: What could be done to reduce, if not to solve, the problem with the force available?

The Answer: Increase prevention and fire inspection activities. Step up public relations program so that support from the public would be forthcoming on any project. Set up program to increase the efficiency of the Department. Revise and rewrite the outmoded fire code. Explore possibility of new ordinances aimed at better fire protection. Finally, set up long-range plan to bring the Department up to necessary strength.

SPOKANE'S Fire Department has 240 members, including a 10-man Fire Prevention Bureau. It protects a city of nearly 190,000 population in an area of 41.48 square miles. As in other municipalities, there has been a rapid expansion of residential, mercantile and industrial areas in the past years, thus multiplying the fire protection responsibilities of the Department. To meet these problems, the Department established certain objectives. This report in general describes those objectives as well as what we have accomplished so far. It is written, not to boast of our accomplishments, but to serve as a guide for other fire departments who want to reach similar objectives.

To increase our inspection program, a system of company inspection was instituted, with individual fire companies making regular inspections of commercial buildings in their "first-in" districts, keeping in service by radio on the apparatus, or, in large buildings, by walkie-talkie sets. This plan has worked very successfully. The fire companies highly approve of it because it not only helps the inspection program and eliminates many fire hazards, but also allows the men to become acquainted with buildings and problems in their own districts, thereby increasing fire fighting efficiency.

After this plan was in operation and working smoothly, the next step was to attempt to reduce the number of residential fires. To do this a system of home inspections was adopted. Briefly the plan was this: companies were assigned certain days each week to inspect dwellings in their districts, staying in service by radio. The men calling at dwellings offer inspection service and if this is accepted, they then inspect the dwelling. It is interesting to note that when the announcement of this program was made in advance of the time we were ready to put the plan in operation, the Department was deluged with calls for inspections which in some cases were so insistent that special trips had to be made rather than to disappoint the homeowners.

In the first season over 11,000 homes were inspected, and while available figures are as yet not conclusive, they are definitely starting to show some fine results. We have also found that there is a marked tendency for homeowners to clean up their places in anticipation of an inspection by the firemen, so the system has merit that may not at first be recognized.

It might be well to call attention to the tremendous possibilities of dwelling inspections in a good public relations program. It is a personal thing for the men and officers to become acquainted with the people who live or work in the districts which they serve. The inspection program then seems to be a favor given by fire fighters to the homeowner and certainly this brings closer public cooperation.

While on the subject of public relations, this Department has long been aware of the value of such a program. Ours is maintained constantly through many channels: Chamber of Commerce, service clubs, schools, through sale of tickets for charitable organizations, cooperation in fund raising for the Red Cross, Muscular Dystrophy, United Crusade and others, and Fire Prevention and Clean-Up activities.

Another worthwhile operation is our first aid and inhalator-respirator service. This apparatus responds to

Chief W. A. Dunham, Spokane, Washington, Fire Department.

On January 1, 1958, the Spokane Fire Department will begin a new work schedule with a three-platoon system serving 24 hours on and 48 hours off duty. In addition to Chief Dunham, the Department includes one assistant chief, six battalion chiefs, 20 captains, 51 lieutenants and 199 firemen. Fifteen fire stations are distributed through the City of Spokane. Apparatus includes a 1,500-gpm pumper, five 1,000-gpm pumpers, nine 750-gpm pumpers, two aerial ladder trucks, three service trucks, a special high-pressure fog and booster unit, an ambulance (with inhalator), a foam carrier, a 500-gpm trailer pump, a rescue boat and 14 fire officers' cars and miscellaneous vehicles. In reserve are three pumpers of 500-, 750- and 1,000-gpm capacity and a service truck.

First aid and respirator service in Spokane has also been well-appreciated by citizens.

any call for help and has been directly responsible for saving many lives. This has brought more sincere expressions of appreciation than any one other service that we offer.

NEXT, to increase the efficiency of the Department, more intensive drill schedules were set up. To supplement this, schools in every phase of fire fighting have been conducted. Last year the Department secured the services of Ethan B. Wilson, retired Assistant Chief of Los Angeles, as a special instructor for a school on inspection, command practices and fire fighting. Having a new approach from an outside instructor added much interest to the school and it was very successful.

Shortly after this our Captain in charge of arson investigation returned from the Purdue Seminar with the idea that such training should be available to more of our personnel, as well as for members of other departments in the area. A committee was formed to work with the faculty of Gonzaga University and soon plans were completed for the Northwest's first Arson Institute. Instructors were drawn from such organizations as the National Board of Fire Underwriters, F.B.I., City of Los Angeles Arson Bureau, Dean of Law at Gonzaga, State Attorney General, Judge of Superior Court, and Prosecuting Attorney's office. The institute met with such favor from the 177 who registered that beyond a doubt it will become an annual affair.

In the matter of a new fire code, this was accomplished after much study and work with many committees from the Chamber of Commerce and local industry. The Fire Prevention Code of the National Board of Fire Underwriters was modified to fit local conditions. It

We Are Sorry You Were Not Home

Your nearby Fire Department Company called today to assist you in Home Fire Prevention.

Please make use of the Home Fire Prevention folder as part of our program to cut down the heavy loss of lives due to fire in the home.

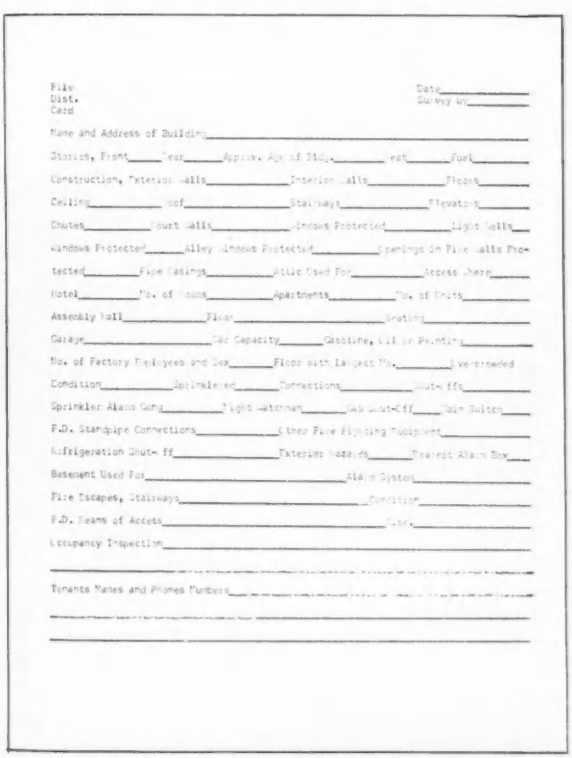
This is another public service rendered by the Spokane Fire Department.

THANK YOU

This bright yellow and red 3- by 6-in. card is hung on doorknobs during dwelling inspections if fire fighters find no one at home.

was then put in legal form by the City's attorneys and passed as an ordinance without opposition. This gives us a modern code to work with and provides much better means of enforcement. Results of application of the new code have been apparent almost from the time of adoption and everyone concerned

(*Continued on page 28*)



File
Dist.
Card

Date
Survey of

Name and Address of Building

Stories, Front Rear Approx. Age of Bldg. Heat Fuel

Construction, Exterior Walls Interior Walls Floors

Ceiling Roof Stairways Elevators

Chutes Court Walls Windows Protected Light Wells

Windows Protected Alley Windows Protected Openings in Fire Walls Protected Pipe Castings Attic Used For Access Ahead

Hotel No. of Rooms Apartments No. of Units

Assembly Hall Floor Seating

Garage Car Capacity Gasoline, Oil or Painting

No. of Factory Employees and Sex Floor With Largest No. Overcrowded

Condition Sprinklered Connections Shut-offs

Sprinkler Alarm Gong Night Watchman Gas Shut-off Main Suction

F.D. Standpipe Connections Other Fire Fighting Equipment

Refrigeration Shut-off Exterior Hazards Nearest Alarm Box

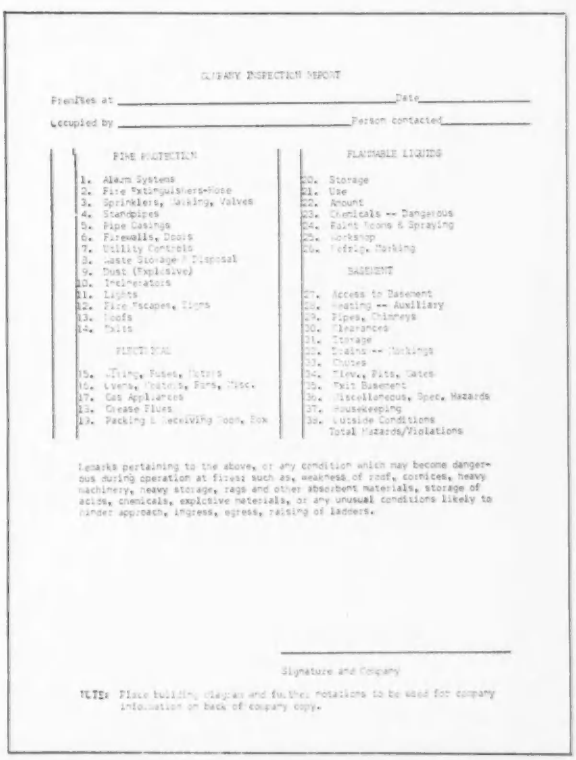
Basement Used For Alarm System

Fire Escapes, Stairways Condition

F.D. Means of Access Date

Occupancy Inspection

Tenants Names and Phones Numbers



OCCUPANCY INSPECTION REPORT

Premises at Date

Occupied by Person contacted

FIRE PROTECTION

1. Alarm Systems
2. Fire Extinguishers-Hose
3. Sprinklers, Wiring, Valves
4. Standpipes
5. Pipe Castings
6. Firewalls, Doors
7. Utility Controls
8. Waste Storage & Disposal
9. Dust (Explosive)
10. Incinerators
11. Lights
12. Fire Escapes, Signs
13. Roofs
14. Exits

FIRE TRAP

15. Piling, Rubbish, Refuse
16. Liveries, Stables, Barns, Misc.
17. Gas Appliances
18. Grease Flues
19. Packing & Receiving Room, Box

FLAMMABLE LIQUIDS

20. Storage
21. Use
22. Amount
23. Chemicals -- Dangerous
24. Paint Rooms & Spraying
25. Workshop
26. Refrig. Marking

BASEMENT

27. Access to Basement
28. Heating -- Auxiliary
29. Pipes, Chimneys
30. Insurances
31. Storage
32. Trading -- Workings
33. Chutes
34. Elevs., Flts., Gates
35. Exit Basement
36. Miscellaneous, Spec. Hazards
37. Housekeeping
38. Outside Conditions
Total Hazards/Violations

Remarks pertaining to the above, or any condition which may become dangerous during operation at fires; such as, weakness of roof, cornices, heavy machinery, heavy storage, rags and other absorbent materials, storage of acids, chemicals, explosive materials, or any unusual conditions likely to hinder approach, ingress, egress, raising of ladders.

Signature and Company

NOTE: Place building diagram and further notations to be used for company information on back of company copy.

Forms used by Spokane Fire Department to assist fire companies in making thorough inspections of commercial properties. Back of form at right is used for sketch of property and other important information.

TESTING A LADDER TRUCK

West Milwaukee Fire Department puts ladder truck through its paces following test procedures of local specifications

RECENTLY, the West Milwaukee, Wisconsin, Fire Department, headed by Chief John Pavlik, placed a new 100-ft. metal aerial ladder truck in service. The truck, equipped with a 100-gal. booster tank, a booster pump and 150 ft. of 1-in. hose, was delivered to the Department last Summer. Accordingly, Chief Pavlik and members of the Department had prepared a series of tests for the apparatus to meet before it was accepted for service. As recommended in NFPA Standard No. 19 — "Specifications for Motor Fire Apparatus" and NFPA Standard No. 193 — "Aerial Ladder Testing," the Department operated the truck in road tests, tested the booster pump, operated and tested the aerial and finally made a careful study of the performance when the aerial ladder was used as a water tower. The procedures are outlined on these pages.

Before the acceptance test, members of the Department were given preliminary instructions on raising and extending the aerial ladder, operating the booster pump, driving the vehicle and steering with the tiller. When the apparatus was not being used for these drills, the Factory Engineer made permanent mountings for equipment on the apparatus and carefully checked its mechanism to make necessary adjustments for the tests.

Ladder truck is spotted at grain elevator in preparation for water tower tests. Pipe was supplied by 3-in. hose. ***(All photos by West Milwaukee Fire Department.)***

Basic specifications for various standard types of motor fire apparatus, including aerial ladder trucks, are included in NFPA-NBFU Standard No. 19. These specifications are written to provide apparatus having the features necessary for a complete well-designed piece of fire fighting equipment. However, it is recognized that the requirements of individual fire departments may vary. Accordingly, the specifications call attention to "special provisions" that may be desirable for local needs.

A fire chief, preparing specifications for bidding by manufacturers, must consider the special demands that will be placed upon the apparatus by the terrain, traffic and fire department operations.

An important part of any specification is the enumeration of the tests that will be conducted to determine that the apparatus delivered meets the specifications. Standard No. 19 includes such tests. If additional requirements are included in the specifications, tests for these may be deemed necessary. It is important that any tests conducted be adequately covered in the specifications so that manufacturers bidding on the apparatus will know what is required, as this may affect the engineering, design and cost of the apparatus.

It is also important that all tests required be conducted as specified.

The story of the tests by the West Milwaukee Fire Department is important because:

1. The Department specified the performance that it desired.

2. The manufacturer designed and built the apparatus to meet these local requirements.

3. Tests were conducted to show that the performance specifications were met in all particulars.

Road Test Procedures

In preparing specifications for bidding, the Department had specified that the apparatus have a low center of gravity, sufficient road clearance to prevent damage to footboard and apparatus due to dips and sharp curves in the road, and that the engine would deliver maximum horsepower without undue strain. It was also specified that when the truck was operated in high gear it would be capable of slowing down in traffic and then resuming speed with full load and crew without requiring shifting to an intermediate gear. Specifications were also made for sufficient torque to give satisfactory performance in all traffic conditions with ample reserve power.

All of the above requirements were met satisfactorily before the main testing began.

THE first road test consisted of a "push-out" with a cold motor. While the roads were somewhat wet and slippery, Fire Fighter Robert Novak, serving as driver, made the initial test of bringing the vehicle from standing position to 30 mph in 18½ seconds in fourth gear with the engine operating at 1,650 rpm. In a second test the vehicle attained 30 mph in 19½ seconds in fourth gear at 1,640 rpm.

> NFPA Standard No. 19 recommends this acceptance test for apparatus: From a standing start through the gears the vehicle shall attain a true speed of 35 mph within 30 seconds. If the purchaser so desires this test shall be met by traveling a distance of 770 ft. in 30 seconds.

West Milwaukee's specifications had required the apparatus to be capable of turning within 33 ft. In two operations driver Novak accomplished a right turn in a turning radius of 31 ft., 6 in. and a left turn in 32 ft., 6 in.

> Standard No. 19 in article 2327 recommends that the steering mechanism shall be capable of turning the front wheels to an angle of at least 30 degrees to either right or left. (If power steering is wanted, the purchaser can indicate this in the Special Provisions.)

Next the hill-climbing ability of the aerial ladder truck was tested. The vehicle was brought to a street that has a 13.5 percent grade. First it was driven downhill, brought to a complete stop, using the emergency brake only, moved again, then brought to a stop using only the foot brake, then held fast by the hill-holder mechanism only. Per-

AERIAL LADDER TEST RECORD

Ladder Company No. 1 Test Date August 27, 1955

Manufacturer's Serial or Register No. H-6815 Ladder No. F-26

Name of aerial ladder manufacturer Seagrave Company

Aerial ladder first placed in service (date) about Oct. 1, 1955

Aerial ladder length 100 feet. Ladder material Yoloy steel

Reason for test Acceptance of apparatus

Weather conditions at time of test Cloudy, warm. Some showers

Temperature 83 °F. Wind velocity (estimated) 10 M.P.H.

Angle, in degrees, of main ladder rail as tested 60°

1. Distance vertical from last rung of fly ladder to ground with 50 pound test weight on fly ladder 4 feet 5 inches.
2. Ladder elevated to 60 degrees and maximum load of 400 pounds applied for five minutes.
3. Distance vertical from rung of fly ladder to ground with same test weight No. 1, 4 feet 4 inches.

NOTE: The figures obtained for No. 3 test are after the maximum prescribed load has been applied to ladder

Remarks If the distances measured in 1 and 3 are within plus 2 in. or minus 2 in. the ladder is in a satisfactory condition for use. Test showed a one inch minus.

Signed John Pavlik, Fire Chief
W. Milwaukee Fire Dept.

Chart in NFPA Standard No. 193 was used as test record for aerial ladder when acceptance tests were completed.

formance was satisfactory in these three tests. It was then driven to another hill having a grade of 15.7 percent.

From a standing position at the bottom the vehicle was driven to the top at 14 mph in 25 seconds, operating in second gear at 2,300 rpm. In a second test to determine how quickly the vehicle could reach 15 mph on this hill it accomplished this speed in 12½ seconds, traveling 168 ft. in second gear at 2,550 rpm.

Standard No. 19—Paragraph 2524 states that if the apparatus is required to operate on any grade in excess of 10 percent the purchaser shall specify the maximum percent of grade.

In subsequent tests on level roads the apparatus was accelerated from 15 to 45 mph in 25 seconds, operating in fourth gear at 2,500 rpm; this test was repeated and the same acceleration was attained in 28 seconds. The vehicle was then accelerated from 35 to 50 mph in 22 seconds, operating in fifth gear at 1,600 rpm. In a second run the same acceleration was achieved in 20 seconds at 1,750 rpm.

The vehicle was then driven up a slight hill from a standing position and reached 35 mph in 30 seconds, operating in fourth gear at 1,800 rpm. In a similar test this same speed was achieved in 20½ seconds. Then the truck was driven at a speed of 50 mph for about three miles, operating at 80 percent of maximum engine speed in fifth gear at 1,750 rpm. This run covered about 20 miles and Lt. Harry Rydlewicz, who operated the tiller during all tests, reported easy operation of the tiller and that the trailer followed the tractor without swaying from side to side on either wet or dry pavement.

Standard No. 19 suggests that fire apparatus traveling at a steady speed of 15 mph in direct drive shall accelerate to a speed of 35 mph within 30 seconds and that the vehicle shall attain a top speed of not less than 50 mph.

Aerial Ladder Test

IN THE afternoon the following tests were performed on the aerial ladder:

1. Ladder was fully extended and set at 45-degree angle, with a rope tied on the right beam at the top of the fly ladder. With a 200-lb. weight suspended on this beam, deflection was five degrees to the right.

2. Ladder was elevated to 60 degrees and a maximum load of 400 lbs. was applied for five minutes. (See chart.)

3. Ladder fully extended and set at 70-degree angle, then lowered to 60-degree angle, held in this position for a few minutes, then raised back to 70 degrees. All performance was satisfactory.

4. In other tests the ladder was hoisted from a level position to 80 degrees in 14½ seconds. (Specifications had asked for

One of the ladder pipe streams developed in the water tower tests.

Pitot readings and back thrust of the ladder were examined easily by Chief Pavlik and other members of the Department on the roof of the grain elevator.

this operation to be accomplished in 18 seconds.) The ladder was then extended fully from the ground in 26 seconds. (Specs asked for this performance in 30 seconds.) It had also been specified that the turntable be capable of rotating 360 degrees in less than 22 seconds. In one test the turntable was turned to the right in 17 seconds, and in the second test turned to the left in 16½ seconds.

All ladder tests were performed with ground jacks lowered in position and ladder locks in place.

Standard No. 19 states that an aerial ladder shall be designed and so powered that from a horizontal position it will lift a weight of 200 lbs. on the free end of the main section of the ladder, in addition to any equipment mounted on the aerial ladder. Standard No. 193 spells out the requirements for testing equipment and procedures. Included in the tests is the suspension of the 200-lb. weight from the fly ladder when the ladder is raised to its proper angular elevation for testing, and the suspension of 400 lbs. from the ladder when it is in a horizontal position, supported by truck arches, with the sections extended to the rear.

Pump Tests

Following the above operations the booster pump was tested. At the factory booster hose had been tested at 1,500 lbs., and the fittings were tested at 1,200 lbs. The booster pump on the truck has a capacity of 100 gpm at 120 lbs. engine pressure. In the acceptance test it was operated at its maximum pressure of 600 lbs. with an engine speed of 1950 rpm. Since a two-quart container for wetting agent is attached to proportion one part wetting agent to 100 parts of water, this also was operated and checked satisfactorily.

Standard No. 19 recommends that booster pumps be of 200 gpm in capacity and able to deliver from draft rated capacity at 120 lbs. net pump pressure and one-half rated capacity at 200 lbs. net pump pressure. The pumps should also be capable of taking suction and discharge water with lift of 10 ft. in not more than 30 seconds with a dry pump.

Water Tower Test

THE most interesting aspect of the West Milwaukee Fire Department's acceptance procedures were the evaluations of the aerial ladder operated as a water tower. For these procedures, the truck was driven to a grain elevator (see photo), placed in proper position, jackknifed away from the building with ground jacks and spring locks set. The ladder was then extended to its full length of 100 ft., and the rungs were locked. At a 75-degree angle the ladder touched the roof of the 90-ft. high grain elevator, and the fly extended about 5 ft. above the building. This permitted members of the Department to stand on the roof and take pitot readings at the pipe tip.

When the ladder was placed on the edge of the roof the points where the beams rested were marked. After each test the ladder was reset to the same points if it did not return to its original position. The ladder pipe was secured to the top rung of the fly, and two sections of 3-in. hose on the ladder were connected to a siamese at the base. This was supplied by two 2½-in. lines connected to a pumper. About 50 ft. up the ladder the hose was secured with a spanner belt. Pitot readings were taken continually during the test to assure that correct pressures were maintained. Then correct measurements could be taken of the distance between the ladder and the edge of the building. The following are the test requirements and results:

Test 1. *Required:* 140 lbs. NP to be applied to a ½-in. tip to provide 546 gpm.

Result: With pipe at an angle of about 30 degrees, back pressure was 348 lbs. with this flow, left beam backed 30 in. from the building and right beam backed 34 in. Same flow and nozzle pressure and a 190-lb. man on the ladder — left beam backed 25 in. from the building and right beam backed 22½ in.

Test 2. *Required:* 130 lbs. NP on a 1½-in. tip to provide 760 gpm.

Result: Pipe at 30 degrees, back pressure was 312 lbs. With required nozzle pressure and flow, left beam backed 42 in. from the building and right beam backed 42½-in. Ladder swayed to the left six inches.

Test 3. *Required:* 80 lbs. NP on 1¾-in. tip to provide 813 gpm.

Result: With this pressure and flow, left beam backed 29 in. from the building and right beam backed 29½ in.

Test 4. *Required:* 50 lbs. NP on a 2-in. tip to provide 841 gpm.

Result: With pipe at 30 degrees, back pressure was 306 lbs. With required nozzle pressure and flow, left beam backed 22-in. and right beam backed 22½-in. With 190-lb. man on ladder directing stream, left beam backed 9½-in. from building and right beam backed 10½-in.

Fog nozzle stream, with pipe at angle of 30 to 45 degrees, caused ladder to back 36 inches from the grain elevator roof.

With pipe in the same angle but turned 10 degrees to left or right, ladder swayed four in. off center in opposite directions. When pipe was set at 90-degree angle parallel to the roof, back pressure caused ladder to move 28 in. from building. A steel tape measure placed on the tip of the pipe showed a distance of 95 ft. from the ground. Without water on the lines or man on the ladder this distance was 94 ft., 5 in. With a man on the ladder the distance was 94 ft., 10 in.

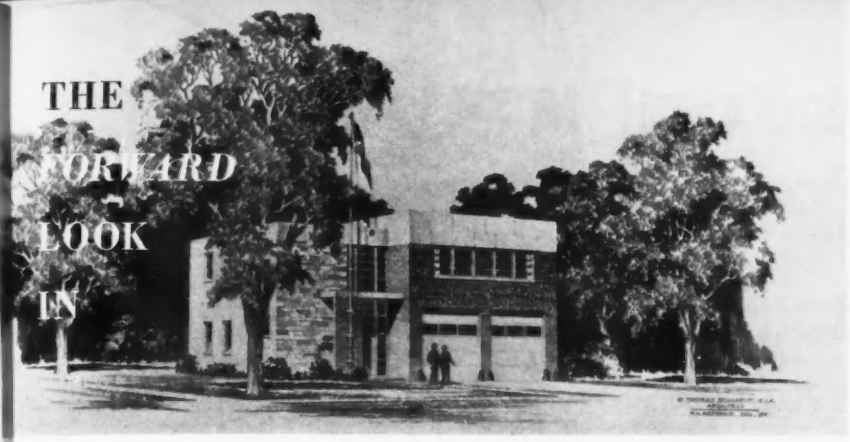
Test 5. *Required:* 290 lbs. pump pressure applied to fog nozzle with 1½-in. tip to give a flow of 350 gpm.

Result: With pipe at 30- to 45-degree angle, ladder backed 36 in. from the building.

While all of the results above fell within the specifications, the aerial ladder, when used as a water tower, will be operated within the rules set by the manufacturer to provide a greater safety margin.

The acceptance tests on the road, on the aerial ladder, on the booster pump, and on the water tower were supervised directly by Chief John Pavlik. In accepting the aerial ladder for service he reported that the equipment was well designed, well constructed and offers maximum amount of safety if operated properly.

It is through carrying out properly engineered tests that fire departments everywhere can gain assurance that their new apparatus meets the purchase specifications and may be expected to give satisfactory performance. In addition, the tests give the fire fighters quick familiarity with the new design or peculiarities of the vehicle. Presence of an engineer from the manufacturer's factory also assures that minor "kinks" receive prompt and expert attention, while if a major flaw shows up, the engineer has the opportunity to observe it immediately and take the necessary action.



FIRE STATION DESIGN

From an address to the 84th Conference of the International Association of Fire Chiefs, New Orleans, Louisiana, by Architect W. Thomas Schaardt of the American Institute of Architects

THE term "fire station" may encompass many different types and kinds of structures, from a single one-car garage, sheltering a piece of fire apparatus and the simplest of alarm devices, to a huge municipal fire headquarters, housing several fire companies, sometimes included as a part of the city or town hall. It may be a building in an area where a fire district does not exist and the cost of the structure will be financed by the firemen themselves, or it may be in a fire district supported by the taxpayers, in which case, the fire commissioners cannot afford costly mistakes in design or construction without severe criticism from their taxpayers and civic groups.

Let us then consider the essential purposes and requirements of the fire station:

To house, shelter and service the fire fighting apparatus and equipment.

To house the alarm and dispatching equipment used in calling out the men and in directing them to the fire.

To provide personnel of the department with the comforts of home, with recreational facilities and with every device to make their work easier, so that they will be more efficient fire fighters.

The site for the station should receive a great deal of consideration. The plot selected should be fairly large to provide ample off-street parking for the firemen's cars and easy access to the building. The setback to the face of the building should be 30 to 35 feet to allow safe exit to the street and uninterrupted turning in either direction, and to facilitate backing in the apparatus. It is sometimes advisable to provide doors at the rear to bring in the apparatus. A corner lot is even more desirable since it will permit the apparatus to respond from two directions. If possible, exercise or practice yards should be provided or an athletic field to attract the younger men. The area should be studied so all sections of the district can be easily reached. Future developments and housing should be considered. Thought should also be given to whether the area is residential, suburban, mercantile or industrial; whether it is congested or open; its proximity to schools, hospitals, churches and other places of public assembly. The type of fire company to be housed is important, whether it is an engine, ladder or rescue company. Perhaps the dispatchers or chiefs will have an office in the building. The total number and type of apparatus to be housed is a fundamental consideration, as are anticipated additions to the apparatus or building.

I have been a volunteer fireman for over 20 years, and after completing my architectural education, I combined my profession with this hobby. I discovered, however, that the design of firehouses had not kept pace with the times. Since a fire station is a municipal building, there is no reason why it should not receive proper study and design. It should set an example of the progress of our times, not only in fire fighting methods, but in the architecture of the period as well. The fire station will stand up as an example of our development just as much as our schools, libraries, churches and other public buildings. — W. Thomas Schaardt

The street upon which the station opens should be wide and paved, providing access in both directions. Doors of the fire station should face in the direction of the most numerous runs or in the direction of the district that contains the greatest fire hazards. The street should not be so heavily traveled that traffic congestion would occur when the trucks were pulling out, or that firemen's lives are endangered on answering alarms.

Traffic lights with controls should be placed at any close intersections to give the apparatus every opportunity to get out. These lights should be controlled from within the station to assure maximum clearance of the trucks at these intersections.

Landscaping of the plot is important since it will tend to tie the building into the surrounding neighborhood, particularly if it is in a residential area. Good landscaping will also soften the lines of the building and make the building more pleasing architecturally, and the parking areas can be hidden from the view of the surrounding homes.

The floor line should be set about 18 in. above the curb line since too steep a pitch on the ramp is hazardous

in cold weather when ice may form on the runway. (This has been overcome by installing radiant heat in the runway, but this is an additional expense and requires considerable upkeep.)

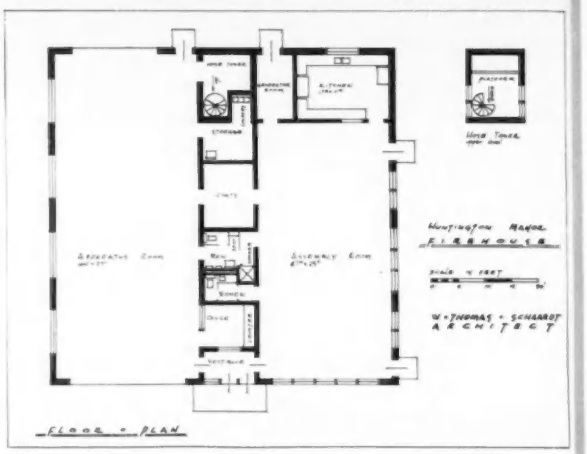
The architect should be a man familiar with the requirements of a fire department and yet willing to take the time to study and investigate the problems of each company and work them into his design. He must have patience and understanding, since he will have to work with a great many men, each having a little knowledge of design and construction. The architect must be able to listen to the ideas of these men, evaluate them and use any that are practical.

If possible, the building should be "fireproof" or nearly so, since it must set an example for other buildings in its area.

Exterior design of the building should be left up to the architect, since he is educated for this work. I feel that a new fire station should be of contemporary design, since it will stand up for many years as an example of the intelligence and progress of our age, just as the temples and churches of the Greek and Gothic periods were monuments of their times. However, if it is erected in a strictly colonial or provincial village, certainly the architect would consider this and design the building to suit community architecture.

The use of glass, aluminum, porcelain, plastics and other new building products should be encouraged since these have been developed to outlast older products and to require the least maintenance, and often are more economical.

The interior of all rooms should be designed for the purpose they are to serve. They should be colorful and warm and require as little maintenance as possible.



One-story fire station with hose tower at rear, apparatus and assembly rooms flanking office, rest rooms and storage facilities. Building measures about 65 by 65 ft.

Another 1-story station with 29 by 62 ft. apparatus room at right, smaller assembly room. Hose dryer is in storage room, upper center, alarm alcove in front.

Stairways should be eliminated wherever possible, but if they must be installed, they should have a gentle run to avoid tripping, should be well lighted, and have non-slip safety treads and substantial handrails. Winding stairways and sliding poles should be avoided completely since they are outdated and very dangerous.

I would recommend the elimination of the hose tower, although there are still departments that say this is the best means of drying hose. The installation of electric hose dryers located at the rear of the apparatus room will save several thousands of dollars in construction costs and prevent heat loss from the apparatus room.

These same dryers can serve a double purpose in that coats and boots can be dried after returning from a fire. There are also hose washers on the market to wash the hose before putting it into the dryer. Both of these items reduce the work load and make it easier for the firemen. If hose towers are preferred, they should be designed with electric motors to lift the hose. The tower should be about 32 ft. high with racks at top to hold the hose and a floor drain at the bottom.

Nerve center of every fire station is the dispatcher's room or the control room. This should be a separate, individual room, adjacent to and near the front of the apparatus room, so the dispatcher can see the overhead doors and have control of all the equipment. It should

(*Continued on page 26*)

Rockwood SG-60 WaterFOG Nozzle is five nozzles in one

The lightweight Rockwood SG-60 WaterFOG Nozzle *eliminates "special" or single-purpose nozzles!* It actually does the work of five nozzles to put out fires faster, safer and more economically.

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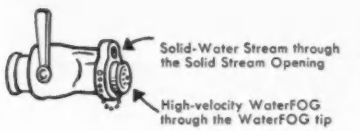

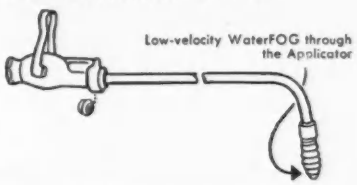

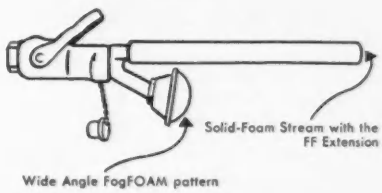

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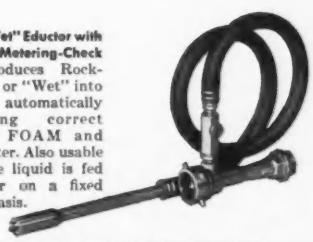
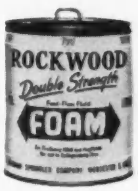
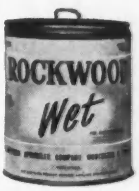




Rockwood Double Strength FOAM. Puts out fires in flammable liquids, and in ordinary combustibles, quicker, at lower cost. Three parts FOAM and 97 parts water create a heat-resistant blanket.



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FF Extension Unit. Shown with Type SG-60 Nozzle. Discharges Rockwood FOAM in a solid stream or as FogFOAM. Wide angle makes it possible to cover large areas at one time.

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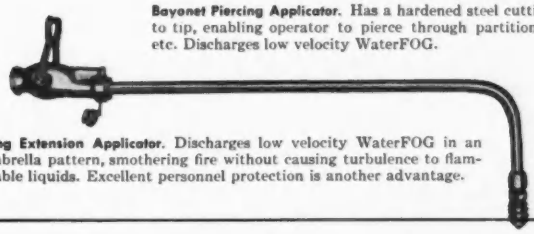

Long Extension Applicator. Discharges low velocity WaterFOG in an umbrella pattern, smothering fire without causing turbulence to flammable liquids. Excellent personnel protection is another advantage.

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WHAT ABOUT MANPOWER?

PART III

by Warren Y. Kimball, Manager, NFPA Fire Services Department and Editor, FIREMEN Magazine

THERE would not be much point in bemoaning the undermanned condition of fire companies if it was not within the power of the fire service to do something constructive about the problem. It is only fair to state that much of the responsibility for the present unsatisfactory situation rests upon the shoulders of the members of the fire service who have failed to prepare and publicly advocate reasonable and effective plans for good local fire service organization.

The service, in general, has been complacent about the manpower shortage without showing the leadership necessary to correct the situation. The result has been that entirely impractical and unacceptable solutions such as the proposed fire-police integration have been advanced by persons aware of the financial problems of many municipalities, but who are incompetent to offer solutions that would give good fire protection. In the absence of a strong program designed to acquaint the public with the needs of the fire service, the success of other programs aimed at getting a bigger bite of the municipal tax dollar has weakened the position of many fire departments. This is obvious from the fact that all too many fire fighters are still poorly paid, work excessive hours by any modern standard and comprise crews so undermanned that their own safety and the safety of the public is jeopardized. Who is to say what part of the injuries and disabilities of fire fighters is due to the fact there are not enough men to perform this arduous work safely and efficiently? What would the public think if it realized that fire trucks did not have enough men to lay a hose line and raise a ladder simultaneously to save endangered persons?

Each fire department should maintain and keep up to date an organizational plan designed to provide an effective fire fighting force with the number and type of fire companies required to provide good fire protection. It is desirable to have a five-year improvement plan, brought up to date annually. This plan should not be one man's opinion, but should be prepared by the top staff officers of the department representing all functions including fire fighting, training, fire prevention, apparatus and equipment, and communications. The plan should be prepared with the cooperation of responsible municipal finance officers and municipal management so that it will have official endorsement.

Part of the job will be to develop a proper organization chart which will set responsibility for getting essential things done, but will also show the manpower needed to obtain satisfactory results.

The plan must include provision of fire stations and fire companies with necessary apparatus and manpower. It will include needed items of equipment, hose and appliances.

An essential basis for any good plan is that it should be designed to protect the entire community on a systematic businesslike basis. Expedients are costly and provide the least desirable solution to a problem.

For example, a serious fire occurs in a certain neighborhood. Immediately there is a strong demand for a new fire station closer to the location where the fire occurred. In the absence of an official plan, a small, poorly manned and equipped firehouse might be built at a location where it would add little protection to the community as a whole and would increase the expense of the fire department without adding real strength. A good plan might show that the area where the fire occurred was under a mile from an existing fire station that houses a pumper and ladder truck which responded promptly, but that the ladder truck only had two men, and better protection would be given the entire city by increasing the strength of this company.

Further, the official plan might call for a new firehouse within the next five years at a strategic location that would improve protection for an extensive residential area including the section where the fire occurred. Having such a plan enables the fire department to direct the public opinion toward support for a strengthening of the department.

One of the facts that fire department officials should recognize is that they have a responsibility to keep the public informed regarding the needs of their department. If there are not enough men to operate essential apparatus properly, the chief should not hide the fact, but should tell the public. Generally, a well-informed public desires a reasonable degree of fire protection and will back up the chief who keeps them informed. It will not knowingly condone "feather bedding," but these days the ribs of the average fire department are showing, and there is not much fat to slice off to present a "lean and hungry look."

Let's see how this might be done in a typical case. The department might publish a list of its present company strength together with its recommendation of minimum needs for each station. For example:

Headquarters:	On Duty	Minimum Needed*
Engine 1	4	5
Ladder 1	2	4
East Side:		
Engine 2	3	4
Ladder 2	1	3
West Side:		
Engine 3 (rural truck in reserve)	3	5
South Side:		
Engine 4	2	3
North Side:		
Engine 5	2	3
Total	17	27

*In many cases underwriters' survey reports indicate the minimum company manpower needed immediately as well as the proper full company manning.

The chief should make clear that his requested minimum strength would still be considerably below the desirable operating strength for the various companies, but would be the least required to provide fairly reliable fire service. As men are added to the various companies, the goals in the long range plan would be adjusted so that eventually with the growth of the community all companies would be properly manned. It would be up to the chief to decide which companies should be strengthened first. Sometimes worthwhile gains may be made by working for limited objectives. For example, in the case mentioned, he might first work for enough men to provide an additional man on each ladder truck, and then seek more men to eliminate two-man engine companies.

The plan should be laid out so that enough men will be added to increase a given crew on a round-the-clock basis. With a 56-hour week this takes at least three men. It is generally a sign of inefficiency to have a fire truck manned by two men on one tour and three men on another. If three men are needed, they are needed on a full-time basis. Manpower should be based upon that necessary to do certain evolutions and use certain equipment. If five men are needed for a job and we provide five men on two shifts and four men on a third shift, we cannot expect the best results. Obviously, it is not always possible to maintain the desired platoon strength, but any unbalanced condition should merely be temporary. Part of the trouble comes when vacancies are not filled promptly or when there are not sufficient men available to cover for men absent due to sickness or injury. If a man is going to retire, a replacement should be requested to start on the payroll the date the former's retirement becomes effective. All too many cities try to save on the payroll by maintaining vacancies on the roster temporarily. It takes long enough to train a fire fighter, and with short crews the roster should be kept at authorized strength. As pointed out, unless some additional allowance is made for covering vacations, sick leave and other absences, companies will run short.

(To be concluded next month)

"You Mean You had **INDIAN FIRE PUMPS** Way Back Then Grandpa?"

"Yes sirree, Buster, our department had them in 1925 and they're the dangdest best outfits made for small fires. Wouldn't be without 'em. Guess they're better than ever today. I see the boys at the station house still have a bunch of **INDIANS** on hand."

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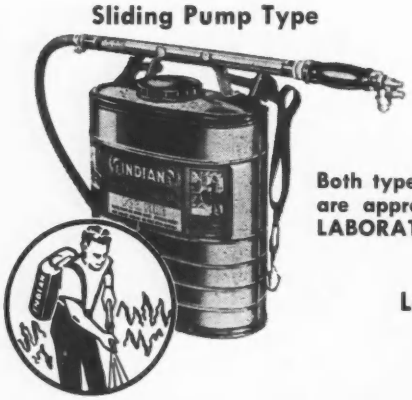

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Your Horoscope?

ONE of the interesting fire se publications is the *Georgia Cracker*, which is circulated t departments throughout that S This illustrated monthly public is issued by the Georgia Safety Commission, of which Zack Cravey serves as commissione

The *Fire Cracker* is edite NFPA member William C. Mu who, in addition to being known to fire service membe southern States, has a nat reputation as a sports annou Bill recently sent the drawing the opposite page to the N since they were featured in his p cation throughout 1957. Reade FIREMEN magazine who pay attention to their horoscopes n find some useful admonitio their particular zodiac months.

The original drawings and tions were prepared for the *Fire Cracker* by H. Parker L who contributes many illustra for that publication.

First Aid Textbook

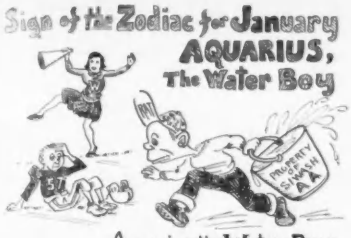
A NEW *First Aid Textbook* has recently been published by the American National Red Cross. This 241-page, cloth-bound book has been revised from the previous three editions and now includes the latest first aid techniques and theories, such as the artificial respiration method of mouth-to-mouth breathing for infants; proper continued use of a tourniquet once it has been put into place; cleansing of minor wounds with soap and water; extended danger of lockjaw (tetanus) now associated with all wounds rather than only punctures.

The text was prepared by Carl J. Potthoff, M.D., M.P.H., University of Nebraska in a straightforward manner and is arranged according to subjects. The first section discusses standard first aid theory and reasons for the use of first aid; wounds, shock, artificial respiration, poisoning, injuries, burns and other types of casualty.

The second section deals with advanced first aid course theory.

Copies of the *First Aid Textbook* are available at American Red Cross Chapter offices.

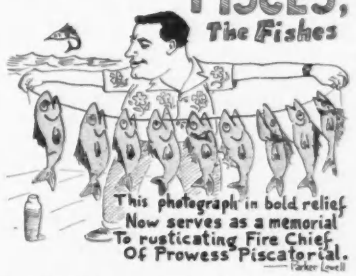
Sign of the Zodiac for January
AQUARIUS, The Water Boy



Aquarius, the Water Boy.
At Grid Games we admire,
He also is a Thing of Joy
To have in Case of FIRE!
—Parker Lowell

P. S. People born under this sign should always be careful with fire in dry weather — or in any other weather.

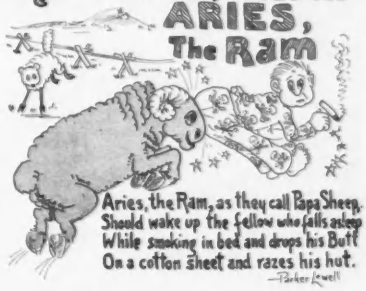
Sign of the Zodiac for February
PISCES, The Fishes



This photograph in bold relief
Now serves as a memorial
To rusticating Fire Chief
Of Prowess Piscatorial.
—Parker Lowell

P.S. Persons born under the sign of Pisces should not hover near gas heaters in flimsy apparel.

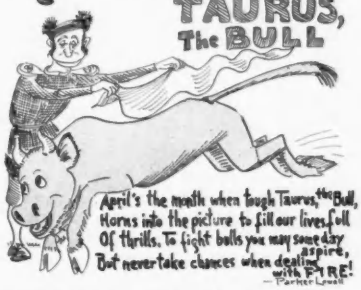
Sign of the Zodiac for March
ARIES, The Ram



Aries, the Ram, as they call Papa Sheep,
Should wake up the fellow who falls asleep
While smoking in bed and drops his Butt
On a cotton sheet and razes his hut.
—Parker Lowell

P.S. People born under the sign of Aries should beware of hot butts when taking a "goodnight drag" on a cigarette!

Sign of the Zodiac for April
TAURUS, The BULL



April's the month when tough Taurus, the Bull,
Horns into the picture to fill our lives full
Of thrills. To fight bulls you may some day aspire,
But never take chances when dealing with FIRE!
—Parker Lowell

P.S. People born under the sign of Taurus should refrain from tossing the bull about the joy of dozing beside open fires!

Sign of the Zodiac for May
GEMINI, The Heavenly Twins

The Twins, known as Gemini to folks who read Latin,
Add Life to the Party when dolled up in satin.
They like to play rough and are heedless of scratches,
But don't let the Darlings get careless with Matches.
—Parker Lowell

P.S. People born under this sign should not look for gas leaks with lighted matches — or their troubles may be twins!

Sign of the Zodiac for June
CANCER, The Crab

The June Bathing Beauty may think Life is drab
Until she makes contact with Cancer, the Crab.
That burning sensation when she takes a dip
May mean that a crab came across with a nip.
—Parker Lowell

P.S. People born under this sign should never use cleaning fluid near open flames of gas or oil stoves.

Sign of the Zodiac for July
LEO, The LION

A Campfire is something you should keep your eye on
Each moment - as if it were Leo, the Lion.
You can't turn your back on the fierce King of Beasts
Nor leave burning embers from gay picnic feasts!
—Parker Lowell

P.S. Lads lyin' under the sign of Leo, the Lion, should never build bigger fires than they need for cooking meals.

Sign of the Zodiac for August
VIRGO, The VIRGIN

In August vacationists need little urgin'
To view sea- or landscape enhanced by a virgin
Her sand pail and shovel might serve very well
An over-stuffed bonfire's blazes to quell!!!
—Parker Lowell

P.S. Motorists born under this sign should never light even a safety match to see if the car's tank contains enough gas.

Sign of the Zodiac for September
LIBRA, The Scales

An ounce of Prevention beats One Pound of Cure.
From Libra, the Scales, we learn lessons - that's sure.
Plump Ladies step on 'em 'mid cheers from the galleries
To see if they ought to cut down on their calories.
—Parker Lowell

P.S. Ladies born under the sign of Libra should maintain their balance and never overload electric wall plugs.

Sign of the Zodiac for October
SCORPIO, The Scorpion

The Scorpion can leave a Sting
That makes one do a Highland Fling.
The Pain he leaves is quite as keen
As boosting Fires with Kerosene.
—Parker Lowell

P.S. Persons born under this sign should not let rubbish accumulate in attic or basement where it can cause fire.

Sign of the Zodiac for November
Sagittarius, The Archer

The Archer is a little fakir
Who often proves a Mischief Maker.
Look out behind when he takes aim -
Nor turn Your Back on Open Flame!
—Parker Lowell

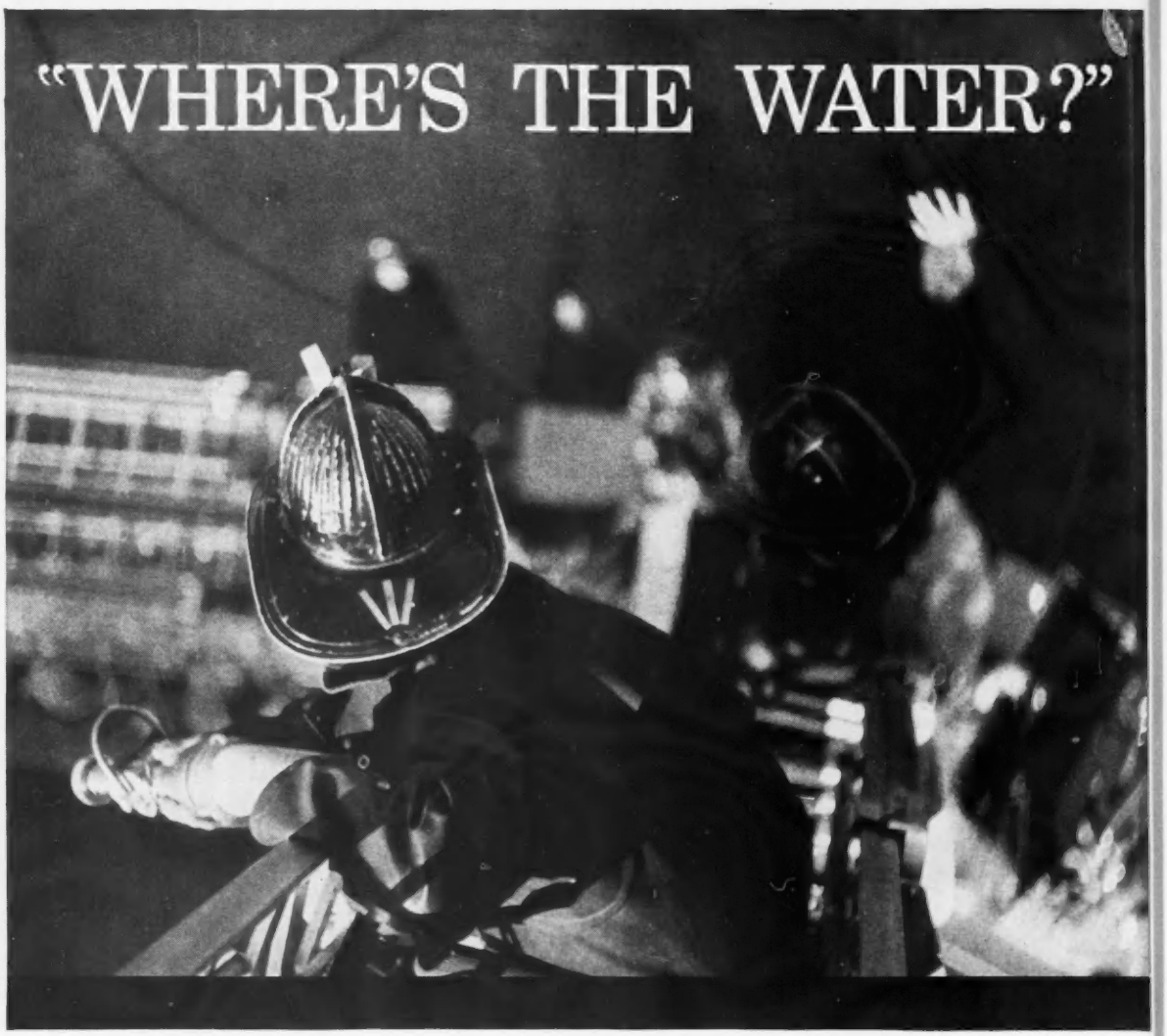
P.S. Parents born under this sign should never let their children stand too close to gas or electric space heaters.

Sign of the Zodiac for December
CAPRICORNUS The Goat

Old Capricorn, December's Goat,
Has toppled many men of note.
His Butt is far worse than his bleat.
He'll land you on the anxious seat.
—Parker Lowell

P.S. Old goats should not light candles on Christmas trees and should never smoke while playing Santa Claus.

"WHERE'S THE WATER?"



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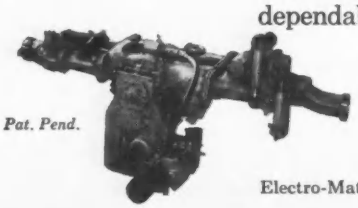
Now, power controls meet every pumping requirement with speed and accuracy you can always count on. The Electro-Matic is the *first* fire pump to offer power operation for all major pump controls—shift, primer, discharge and transfer valves. This means less chance for error and fast, sure action. For example, Electro-Matic's Transfer Valve is controlled by a simple "Volume", "Pressure" switch. Changing operation is simple, swift and smooth, without pressure "shock" so dangerous to firemen. Electro-Matic also features a new design that reduces weight, takes much less space and offers extreme mounting flexibility. Waterways and impellers have been newly engineered for even greater performance under a wider range of conditions. All this in addition to famous Waterous dependability. Send for FREE Booklet that gives complete details.



Pat. Pend.

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*Registration applied for.

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Chains for Tractor-Trailer Aerials?

A MEMBER raises the question about the use of tire chains on tractor-trailer type aerial ladders and other suggestions for safety when driving on ice and in snow.

Tire chains are not generally recommended for trailer wheels, just as they are not used on the front wheels of the tractor. These wheels are for steering and are not driving wheels as are the dual rear wheels of the tractor under the ladder turntable.

For good traction, either double sets of tire chains or dual tire chains should be provided for the dual rear wheels of the tractor. With both of the double driving wheels on each side equipped with chains the truck will pull through snow that cannot be negotiated with single chains.

It should be remembered that chains are provided for safer traction. In slippery weather, speed must be decreased to reduce stopping distances. It is important to have plenty of clearance around the wheels and fenders. Low slung vehicles with little road clearance bog down much more readily than higher slung vehicles with good clearance under the vehicle and around the wheels.

In general, with tractor-trailer apparatus, the brakes on the trailer are adjusted to take hold very slightly ahead of the tractor so that the trailer will not tend to "ride up" on the tractor. The brake adjustment is not changed for winter service with chains. As long as the wheels of the trailer are in line with the tractor when stopping, there should be no skidding effect if the pulling tractor is properly equipped with chains. Of course, in turning corners, extra precautions should be taken where traction is poor because skids are more likely and the danger is largely proportional to the speed.

Many fire departments provide sanders on the trucks for better traction in icy weather and some carry containers of sand or rock salt for emergency use.

"For crying out loud, Fignewton, them big ones take too long to clean. Now throw her back and get me some bass!"

Maryland Short Courses

THE second annual Industrial Fire Safety Short Course will be held at the University of Maryland, College Park, February 4–6. It is designed to meet the needs of industrial personnel who have assigned fire safety responsibilities.

The seventh annual Short Course for Fire Inspectors will be held at the University April 8–11. Detailed information can be obtained by writing to Director Robert C. Byrus, Fire Service Extension, University of Maryland, College Park, Maryland.

Better Hose Care-with CIRCUL-AIR
HOSE CONDITIONING EQUIPMENT
WASHERS • DRYERS • TURN-TABLES • STORAGE RACKS

ROTO-JET HOSE WASHER
WASHES — RINSES — DRAINS

Washes, Rinses, Drains hose thoroughly and quickly. Simple, one-man operation. Ashes, dirt, mud and sludge are scrubbed out and flushed away. Saves time. Lengthens hose life

FIRE HOSE DRYER

The patented, electrically operated Circul-Air hose dryer circulates prewarmed fresh air through loosely coiled hose at the rate of 5 to 6 air changes per minute. Saves floor space, hard work and lengthens hose life. No other drying method is so fast — so economical — so easy to use. Circul-Air is the preferred drying method in over 4,000 leading Fire Departments.

ACCEPTED — APPROVED
RECOMMENDED

Approved by Underwriters' Laboratories . . . and Canadian Standards Association. Recommended by all leading fire hose manufacturers.

Porto-RAK
The fast, modern way to handle, store and load hose.

MOBILE
HOSE STORAGE
AND
LOADING RACK

Eliminates the HARD work of loading hose.

Holds 1,800 feet of 2½" hose and proportionately more 1½" hose in an 8½' space (loading table detached). Easy, convenient to use. Roll it right up to the truck for complete hose reload — out of the way when not in use. Equipped with locking fiber-wheeled casters.

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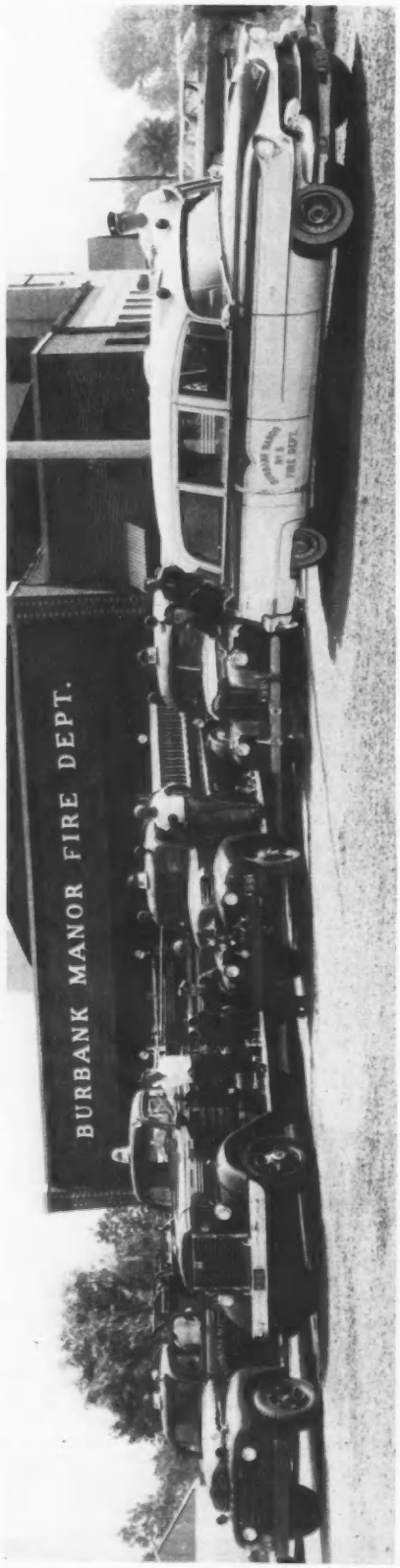
THE CIRCUL-AIR CORPORATION
575 EAST MILWAUKEE
DETROIT 2, MICHIGAN

Another New Champion to Burbank Manor*!

THEIR THIRD DARLEY PUMPER



*Illinois

50 Years of Friendly Service — 1908–1958

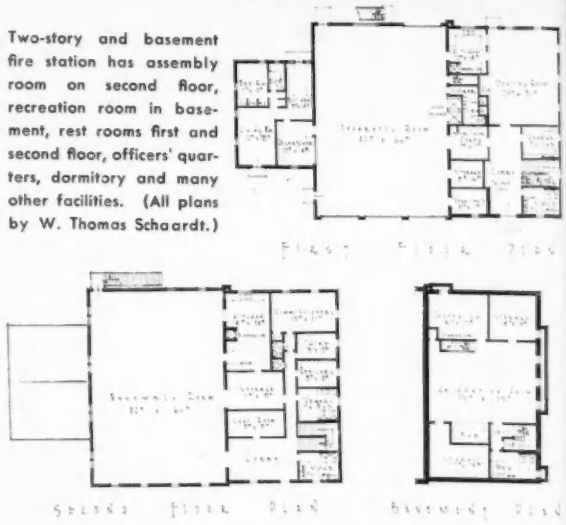
W. S. DARLEY & CO., Chicago 12

– Factories – Chicago and Chippewa Falls, Wis.

FIRE STATION DESIGN

(*Continued from page 18*)

Two-story and basement fire station has assembly room on second floor, recreation room in basement, rest rooms first and second floor, officers' quarters, dormitory and many other facilities. (All plans by W. Thomas Schaardt.)



have a door leading to the apparatus room and a glass panel affording view to the room. All the essential fire alarm communications such as the telephones, the fire alarm, radio, traffic controls, door controls and public address systems should be in this room.

This room should also command the main entrance to the building so the dispatcher could know who is in the building at all times. The room should be made as comfortable as possible for the operator, since he will spend most of his working day in this area. It should have acoustical walls and ceilings, plastic or wood wainscots, air conditioning and good lighting.

After the alarm room, the apparatus room is probably the most important room in the fire station and the *one most misplanned*. It should receive careful consideration to anticipate future developments in both the number and type of apparatus. It should be clear and unobstructed. Columns, sliding poles and stairs should be omitted. The overhead door should be at least 12 ft. wide by 12 ft. high and should be motor driven with provisions for manual operation in the event of power failure, unless an emergency generator is installed for emergency operation. The space allotted for a pumper should be 14 ft. wide by 35 ft. deep minimum with a 50 ft. depth or more for a hook and ladder truck. Sufficient space should be allowed around all apparatus to give the men floor space to change hose and clean the trucks upon returning after a fire and to prevent accidents in boarding the vehicle.

Battery chargers should be located suitably so that the trucks can be easily charged and booster reels should be provided conveniently to refill the booster tanks upon returning to the house. Hose bibs and electrical outlets should be provided around the room.

Map cases, bulletin boards and chalk boards should be located near the alarm room, easily accessible to both the dispatcher and firemen. It is also recommended that a public address system be located in the apparatus room so the men can be directed to the fire verbally by the dispatcher.

Walls of the apparatus room should be ceramic tile, terrazzo, glazed block or some non-porous material that would not be damaged if trucks were washed down inside the room. Such materials will save the cost of frequent repainting. The floor should be cement, terrazzo, mosaic or some material that can be easily washed. Floor drains should be installed to remove water which will drip off the trucks, and devices for carrying away exhaust gases should also be incorporated. Where terrazzo or tile is used, lines of a different color should be installed to guide truck movement.

The kitchen is a functional unit in every fire station and since it is not unusual for a fire department to serve 200 or more people, plenty of cabinet and storage space should be provided for dishes and cutlery. The kitchen is well placed if it can serve both the apparatus room and the assembly area.

It is customary in most volunteer departments to include an assembly room. This is sometimes used by outside civic groups or may be limited to firemen's activities. However, this room should be ample to accommodate the anticipated assemblage and one should allow about 10 sq. ft. per person for dining, or 8 sq. ft. for seated assemblies. This room should be clear, with no columns or other obstructions; it should be well ventilated and air conditioned if possible. It should be rich in feeling, yet one not too difficult to maintain. Colors in this area can be bright to present a gay spirit. A public address system should be included.

Recreation is another important part of every department. The station should include a comfortably furnished lounge room with television, radio, pool table and perhaps a small library for reading matter, or a card and game table. This club-like atmosphere will tend to boost the morale of the men.

Business affairs of the department are generally handled by the officers and a room should be provided for these men. It should be furnished in a simple motif.

Storage and work spaces are of great importance and are too frequently overlooked in the architectural plans. These can be located in the basement, but some storage should be adjacent to the apparatus room where it is easily reached. A workshop should also be provided for repairing the equipment.

Up to this point, I have been discussing the needs of the volunteer department, since I believe that the permanent paid department differs in only a few respects. All the previous considerations regarding site, location, surroundings, apparatus facilities and recreation are the same for a paid department as a volunteer one. However, it is not always necessary to have as large a meeting room and this area could be replaced by the dormitory, which should have good lighting, air conditioning, blinds or draperies.

Roomy, well ventilated, lighted and heated washrooms with shower and washing facilities should be adjacent to the dormitory and the apparatus room.

The method of heating will vary with the individual house and its location. I have found that in the smaller stations hot air is economical and works satisfactorily, but in a large station, where it would be best to install separate zones for the different areas, it is almost as economical to install a zoned hot water system since it can be easily installed and requires almost no attention for maintenance. A separate thermostat for each area would control a heat circulator.

The electrical system is generally quite complicated and requires considerable study since there will be several large motors for the air compressors, sirens, hose dryers and air conditioning. It is a good idea to provide additional circuits to cover new items that might be purchased and, if possible, to install the electric work in conduit so wiring could be changed without too much difficulty. Conduit systems must be installed for telephones, fire alarm, television and radio.

In summing up, it is advisable to consult a good architect early, possibly before purchasing the site, and plan well and wisely. The architect should study the needs of each unit and design a building that contributes toward the greatest efficiency of the department, yet one that will be economical and which will include as many laborsaving devices as possible.

Now **Fire Exits Can Be Locked . . . Safely, Legally with EXIT LOCK!**

(For use with panic bars)

● EXIT LOCK safeguards lives and property . . . allows fire doors and emergency exits to be locked legally, yet permits instant exit when fire strikes! EXIT LOCKS may be unlocked by authorized personnel for deliveries, loading, etc. Alarm bell rings when *unauthorized* person opens door. Fits single or double door exits with panic devices.

BEST

For details, write Dept. F-6

Best Universal Lock Co., Inc.
10 N. Senate Ave., Indianapolis 4, Indiana

Handy for your Fire Company

The NEW HALE TORRENT

A New, Self-Priming Portable Pump Ideal for Firemen's Auxiliary Use

Lightweight, portable, and built to stand up under hard usage, the HALE "Torrent" is the sure, fast answer to the lesser, but time-consuming, water-pumping problems for firemen.

Self-Priming under adverse conditions is the keynote of the "Torrent" shown here pumping out a flooded manhole. "Torrent" pumps the water level down to the "bottom," re-primes when strainer again becomes submerged.

The "Torrent" shown here pumping water from a flooded cellar, when powered by a 2¾ H.P. 4 cycle engine will pump over 7000 gallons per hour. Its rugged and simple design handles muddy and sandy water, thus saving your Mid-ship pumps. Does not clog or show appreciable wear.

AVAILABLE 3 WAYS

Model 20T — Gasoline Engine Driven Unit
Furnished with 4 cycle 2¾ H.P. gasoline Briggs and Stratton Model 8FBFB engine, EQUIPPED WITH EXHAUST VALVE ROTATOR for long "trouble-free" service.

Model 15TP — Pedestal Pump
For your available power.

Model 15TPE — Electric Motor Driven Unit
With 1½ H.P. 3450 RPM. Single Phase Motor.

Get Full Details on the "Torrent." Send for FREE bulletin No. 363. Write: Dept. F.

HALE FIRE PUMP CO.
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A permanent record of honor and service in enduring bronze

There is no finer way . . . to pay permanent honor . . . than an everlasting record in a dignified International Bronze plaque.

Write today for our beautifully illustrated Brochure A . . . showing hundreds of original ideas for reasonably priced solid bronze plaques, honor rolls, memorials, awards, testimonials, commemorative tablets. For trophy, medal, cup ideas, write for Brochure B. Dept. 67.

INTERNATIONAL BRONZE TABLET CO., INC.
150 West 22nd St., New York 11, N. Y.

PLECTRON Fyrcall

CRYSTAL CONTROLLED

TONE ACTIVATED

High Frequency Radio Receiver

THE MODERN ALARM

- Buy a Fyrcall for each fireman. Send spoken alarm & instructions.
- Use present police or fire transmitter to send alarms.
- Receives only messages preceded by a tone. (1000 to 3000 cps available.)
- Manual reset button.
- Crystal frequency control.
- High volume to 3 miles with no outside antenna. Volume control on back.
- Low cost. Low power consumption. 6 tubes & rectifier. 27 Watts.

Please Write to

PLECTRON CORPORATION
OVERTON, NEBRASKA

Spokane, Washington, Reporting

(*Continued from page 13*)

feels optimistic about the future good that will be derived.

Following the successful adoption of the fire code, the possibility of a retroactive ordinance requiring basement sprinkler systems was explored and after many months of laying the groundwork with the assistance of the Fire and Accident Committee of the Chamber of Commerce and working with committees of the building and property owners, an ordinance requiring installation of sprinkler systems in all basements within the fire zone was drafted. This provided for exceptions in certain cases and allowed five years for compliance so that leases and rents could be adjusted to meet the additional costs. This, it was felt, was a great step toward the elimination of many basement fires which in the past have been the cause of some of our most disastrous fires. It is interesting to note that this ordinance was passed by the City Council *without one person appearing in opposition*. This has been unheard of in former cases of retroactive ordinances and can only be attributed to the public relations program and the fact that the citizens are solidly behind their Fire Department.

So, 1957 passed as a year of considerable progress. A new fire station has been completed and placed in service with the addition of ten new men and a 1,000 gpm pumper. This covers an area that was too far away from the nearest stations and will give much added protection to a fast growing industrial district.

In a budget which has just been approved for 1958 are provisions for one new 1,000 gpm pumper, eight new men to strengthen service truck crews, a substantial wage increase and general pay scale adjustment, and approval for reducing the working schedule from 63 to 56 hours per week thereby changing from a two to a three platoon system. To accomplish this requires the addition of 23 new men and the promotion of 21 of our fire fighters to the rank of lieutenant. The change in the working schedule will be another welcome contribution to improving our efficiency.

Greetings

A SALUTE TO FIREMEN

"FIREMEN DON'T HAVE A CHANCE"

When the fire trucks are delayed 40 seconds in traffic, people say: "It took them 20 minutes to get here."

When the truck races at 40 m.p.h., it's "look at those reckless fools."

When four men struggle with an eight-man ladder: "They don't even know how to raise a ladder."

When firemen open windows for ventilation to reduce heat in fighting a fire: "Look at the wrecking crew."

When they open the floor to get at the blaze: "There goes the axe squad."

If the chief stands back where he can see and direct his men, people say: "He's afraid to go where he sends his men."

If they lose a building: "It's a lousy department."

If they make a good "stop" folks say: "The fire didn't amount to much."

If lots of water is necessary: "They are doing more damage with water than the flames."

If a fireman gets hurt: "He was a careless guy."

If a citizen gets hurt: "It's a crazy department."

If a fireman inspects a citizen's property: "He's meddling in somebody's business."

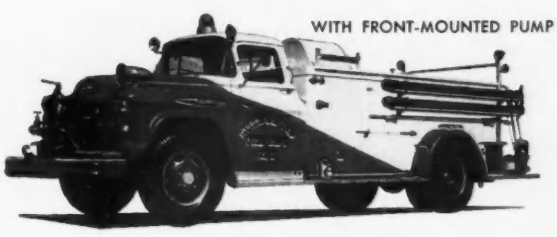
If he wants a fire hazard corrected: "I'll see the mayor."

If he gets killed and leaves a family destitute: "That's the chance he took when he joined the fire department."

Reprinted courtesy of CHICAGO FIREFIGHTER

As a firefighter, you may have overheard remarks like these. But you work on regardless, saving lives and protecting your community—because this vital job must be done. To help you succeed, American Fire Trucks are built to suit your community's needs.

WITH FRONT-MOUNTED PUMP



WITH MIDSHIP PUMP

American

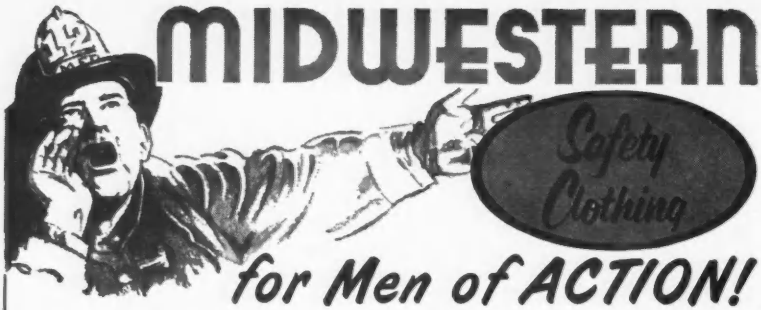
FIRE APPARATUS CO.

"Always Pioneering with Better Engineering"

Contact your nearest American Representative for full details.

Main Office: Main Street Rd., Battle Creek, Mich. Plants at: BATTLE CREEK, MICH., MARSHALLTOWN, IA., STRATFORD, ONT.

(Reprints of this page available upon request.)



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Safety Clothing

for Men of ACTION!

The Original MIDWESTERN

STRIPED SAFETY COAT

Reduces Accidents — Saves Lives!

When working under hazardous conditions in smoke, fog, dust and darkness, you deserve the safety protection found only in the Midwestern Striped Safety Coat. The highly visible yellow stripes are *rubberized as part of the material* . . . not glued, painted or sewed on.

There are many imitations but no substitute for Midwestern quality, design, fabric texture and safety features. For complete information see your Midwestern dealer. A letter to the factory will also bring you literature and materials for your inspection.

MIDWESTERN SAFETY MFG. CO. Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Safety Coats**

Onan ELECTRIC PLANTS

ELECTRIC PLANT NEWS

Onan ELECTRIC PLANTS

Police and fire departments are assured power

Onan 10KW Emergency Electric Plant protects community building

Among the many modern features of the new community building in Indian Hill, Ohio, is *insurance against power interruptions.* When disasters knock out highline power, the Onan Electric Plant starts automatically and supplies all the electricity needed for police and fire departments. Provides current for lights, radio and other electrical equipment. Allows vital municipal services to operate normally, *protecting the community.*

The Onan 10KW, Series "CW" standby plant at Indian Hill is powered by a 4-cycle, 2-cylinder, air-cooled engine. It is equipped with Vacu-Flo cooling which allows installation in a closed room or small compartment.

Check Onan quality and low prices before you buy an electric plant for any purpose.

A.C. Models: 500 to 75,000 watts. Also D.C. and Battery Charging units.

Write for folder on standby and portable models

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2960A University Ave. S. E., Minneapolis 14, Minnesota

Onan ELECTRIC PLANTS

ELECTRIC PLANTS • AIR-COOLED ENGINES • GENERATORS • KAB KOOLER

New Committ

RECENTLY added to the hundred-plus NFPA committees is a new Committee on Fire Department Organization. Its members will work with other committees of the Association that develop standards on fire department equipment, fire hose, firemen's training, rural fire protection and forest protection. Since the NFPA does not commit its members with respect to the final use of suggestions resulting from committee deliberations, this group of committees has provided an opportunity to crystalize ideas concerning ways in which the various problems of fire departments may be handled.

The new Committee on Fire Department Organization, which met in Hartford, Connecticut, November 14 and 15, devoted two days to exploring the general subject. The group is charged with preparing standards and recommendations on fire department organization and operation, and various possible fields of work were reviewed.

It was agreed that there were both short-range and long-range problems. A short-range problem discussed was fire department manpower. As an example of long-range problems, it was agreed that the whole area of fire department organization should be considered with the idea of making helpful suggestions in both organization and operating details which could be worked out by fire departments.

It is too early to comment, except generally, in respect to what will develop from this Committee's work, but the successful standardization of requirements for fire department equipment by another important committee, the NFPA Committee on Fire Department Equipment, indicates that this project should be helpful.

A distinguished group of persons forms the new Committee on Fire Department Organization. Fire Chief Henry G. Thomas, of Hartford, Connecticut, is Chairman. He is a Vice President of the National Fire Protection Association and a past-President of the International Association of Fire Chiefs. Horatio Bond, Chief Engineer of the NFPA Staff, is Secretary of the Committee.

Organization

Other members of the new Committee are: Dale K. Auck, Federation of Mutual Fire Insurance Companies, Chicago; William D. Buck, International Association of Fire Fighters, Washington; Loren S. Bush, Board of Fire Underwriters of the Pacific, San Francisco; Robert C. Byrus, University of Maryland; Francis X. Cotter, Commissioner, Boston Fire Department; Boyd A. Hartley, National Board of Fire Underwriters, New York; Martin S. Hurst, Deputy Fire Marshal, Ontario, Toronto; Harold E. Kuhlman, Oklahoma Inspection Bureau, Oklahoma City; Boris Laiming, Los Angeles, California; Chief Lloyd Layman, U. S. Federal Civil Defense Administration, Battle Creek, Michigan; John A. Neale, National Board of Fire Underwriters, New York; Orin F. Nolting, International City Managers' Association, Chicago; Julian H. Orr, City Manager, Portland, Maine; John N. Pryce, Dominion Board of Insurance Underwriters, Montreal, Quebec; and Chief James J. Sweeney, Jr., Fire Department, Oakland, California.

Chicago Ambulance Service

CHIEF Joseph J. McCarthy, supervisor, Ambulance Service for the Chicago Fire Department, reports that the article in the October, 1957 FIREMEN, "Fire Department Rescue and Ambulance Service," does not give the complete picture as far as the Chicago Fire Department is concerned. In addition to the 13 emergency squads reported, the Department now mans 17 emergency ambulances with two-man teams on duty with each ambulance. These ambulances are used strictly for emergency service such as street accidents, inhalator calls, fire duty and do not transport indigent cases. The ambulances handle between 2,500 and 3,000 calls per month.

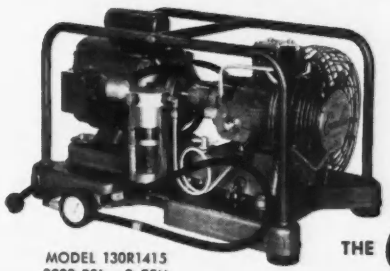
All fire fighters assigned to the ambulances must have had at least 10 years active fire duty and in addition must have had special training in operation of the emergency equipment as well as standard and advanced Red Cross First Aid Courses.

From one chief to another . . .

CHIEF WM. J. CAWKER
TOPEKA, KANSAS, SAYS:

"The Cornelius air compressor is a valuable asset to any fire department."

Chief Cawker reports: *"The City of Topeka moved to replace canister type masks with pure air masks in May, 1952. When the change-over was completed we solved the problem of a dependable supply of compressed air through the acquisition of a Cornelius Model 130R1415 high pressure air compressor. This cleared up any uncertainty of an adequate supply of clean air. This compressor is a valuable asset to any fire department."*



MODEL 130R1415
3000 PSI — 2 CFM
Weight complete — 95 lbs.

There is no substitute for an abundance of pure, fresh air for prompt, effective fire fighting. Write today for FREE Cornelius portable compressor catalog or call your fire equipment distributor for a demonstration. Find out why Cornelius compressors are recommended by fire chiefs everywhere.

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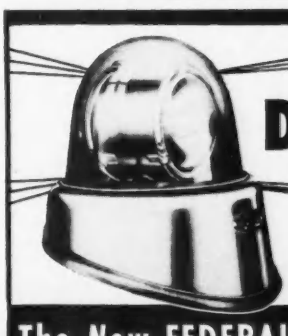


Double Brilliance-

Double Value!

The New FEDERAL Model 171, Beacon Ray light

Here is the new **Super Beacon Ray** with **super beam, Super range, super brilliance.** If you want super visual protection, write for information on the **new FEDERAL model 171.**

It looks just like the regular number 17 Beacon Ray, in a picture. It looks just like it mounted on your truck.

But . . . like the better automobile, it's not what it *looks* like but what's under the hood that makes the difference in performance.

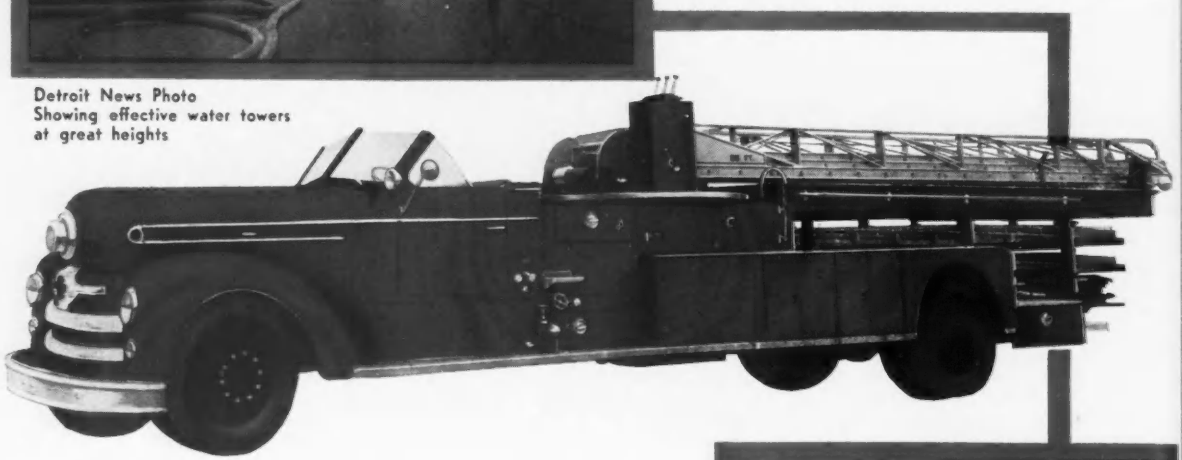
Emergency vehicles in modern traffic are more and more dependent on warning lights. The new 171 Beacon Ray's flashes are not twice as bright, but ***many times brighter*** than the 1957 standard.

FEDERAL 8717 S. State St., Chicago 19, Ill.
SIGN and SIGNAL Corporation

Detroit News Photo
Showing effective water towers
at great heights

Seagrave Safety Steel AERIAL LADDER

. . . Seagrave quality construction — your assurance of greater safety and greater dependability!



This safety-steel aerial ladder is built as only Seagrave can build it . . . quality construction throughout. It has every refinement, every feature made possible by Seagrave advanced engineering . . . All welded construction, trouble-free hydraulic power hoisting, positive ladder locks for each extension section, one man control, Seagrave V-12 engines, shorter wheelbase. When it is something as important as fire apparatus nothing but the finest should be considered. Those extra dollars invested in Seagrave bring you extra quality, value and service.

SEAGRAVE *THE GREATEST NAME IN FIRE APPARATUS*

MAIL THIS COUPON

The Seagrave Corporation,
Columbus 7, Ohio.

Send complete information regarding Seagrave Safety Steel Aerial Ladder trucks.

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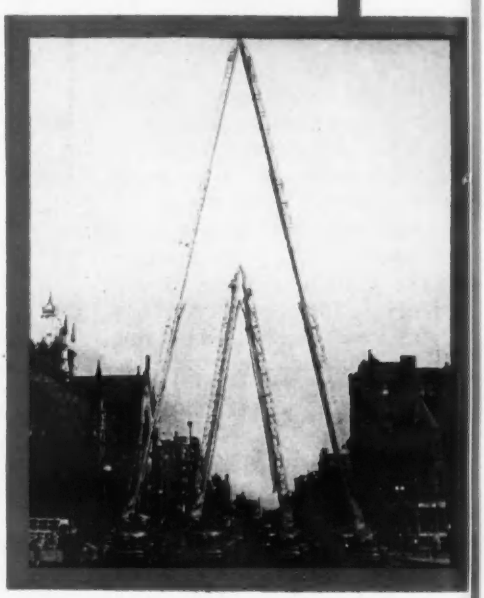

Boston, Mass.

In Canada — King-Seagrave Ltd., Woodstock, Ont.

Automatic Recording

FIRE Officer D. W. Yeiser of the St. Joe, Indiana, Volunteer Fire Department reports an interesting application of automatic fire alarm recording. The Department protects a town of 500 population, and all fire fighters are volunteers.

Some time ago, when the town was converted to the dial telephone system, the Department found that there was no central station open 24 hours every day. Accordingly, the fire fighters developed their own method of recording fire alarms and telephone calls.

At the fire station the telephone receiver is off the cradle at all times. A solenoid switch opens and closes the telephone circuit according to incoming calls. A record player that operates with a mercury switch provides a vocal answer to any telephone calls, while a tape recorder takes the telephone message. Whenever the fire station number is dialed, each of these operations is performed automatically, and the siren also is actuated. Members of the Department who respond to the siren alarm merely play the tape recorder to obtain information of the fire call.

Mr. Yeiser reports that the system has worked well for more than four years. If other volunteer fire departments have developed similar methods for handling dial telephone calls, it would be appreciated if the information were sent to the NFPA Fire Services Department.

Booklet on Farm Fire Protection

THE Office of Fire Marshal W. J. Scott, O.B.E., Q.O., Ontario, Canada, has published an attractive 16-page 5½- by 8⅜-in. illustrated booklet on farm fire protection. It should be of interest to many fire departments charged with protecting farm and rural property. Sections of the booklet cover pre-fire planning, construction of buildings, water supply, "first-aid" equipment, fire extinguishers, fire department operations, electrical hazards, lightning and other subjects. The booklet features a diagram of typical farm property suggesting proper fire prevention and fire protection.

Write to: Fire Marshal of Ontario, 210 Huron Street, Toronto 5, Ontario, Canada, for free copies.

MORE FIRE-FIGHTERS DIE

of smoke and fume inhalation than from heat and flames!

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The Fireman with the Scott Air-Pak breathes SAFELY in any Atmosphere

Excessive smoke inhalation can have cumulative effects which in time can result in various disabilities and even tend to shorten life. Without complete Scott Air-Pak protection fire fighters can enter the realm of unhappy statistics.

But to the man who wears a Scott Air-Pak, the above is what happens to the other fellow. With Air-Pak protection the fireman enjoys cool, fresh air with every breath, no matter how thick the smoke gets.

And the new SCOTTORAMIC Mask gives vision unlimited — wide angle vision in all directions that helps firemen to spot danger zones quickly.

Scott Air-Paks give the greatest protection at the lowest cost. Write for complete information, or contact your nearest Scott Distributor.

SINCE 1932 Scott FOR SAFETY - FOR SERVICE

Safety Equipment Division

SCOTT AVIATION CORP.

236 ERIE STREET LANCASTER, N. Y.

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"Originators and Sole Manufacturers" of

THE INVINCIBLE NOZZLE

STATIONARY AND PORTABLE TYPES

FOR STANDPIPE USE

A COMPLETE FIRE FIGHTING UNIT

Fig. 2

Operates by handle. Made in four sizes: 300 gpm, 600 gpm, 1100 gpm and 2000 gpm.

Fig. 3

Equipped with Locking Device to set nozzle elevation without an attendant. Comes in sizes from 300 gpm to 10,000 gpm.

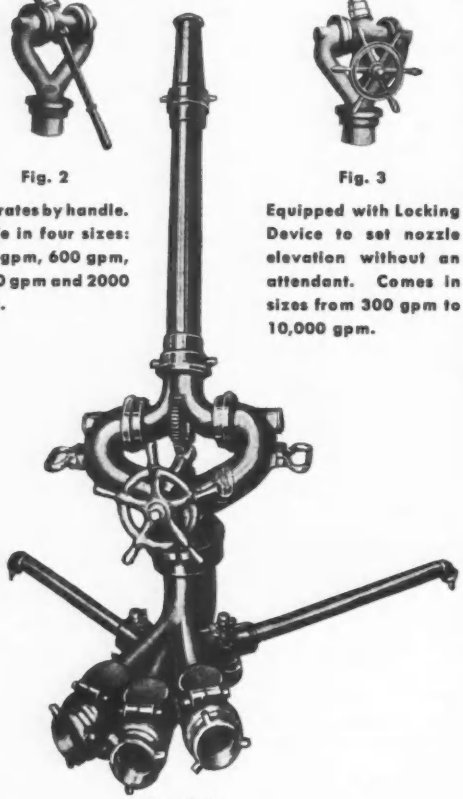

Fig. 149

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Teen-age Rocketeers

FIRE marshals and other public safety officials are discovering to their dismay these days that another problem has been dumped in their laps by the research scientists. This time it's rocketry, practiced by teen-age boys who find an interesting challenge in the problems associated with building and launching rockets.

There is a serious explosion hazard associated with rocket launching. Two fatalities and numerous injuries have already been reported. Lesser, but very real dangers are introduced in the handling and mixing of rocket fuels, not to mention the threat to life and property from missiles created by successful launching.

What is the proper course to be taken in this matter by officials responsible for public safety? Several state and city fire marshals are now wrestling with this problem. To determine the proper course to follow in his state, Connecticut State Fire Marshal Captain Carroll E. Shaw, in December, held a conference of representatives of the military services, rocket experts, teen-age rocketeers, educators, enforcement officials and fire protection engineers. No formal conclusions were reached by those in attendance, however, based on the personal reaction of the NFPA staff representative who attended the meeting, the NFPA offers the following suggestions:

1. Because of the danger to the boys themselves, as well as to others, the hazardous phases of rocketry — fuel handling and rocket launching — should be conducted only at specified safe locations (*e.g.*, rifle ranges) and under strict supervision by qualified persons thoroughly familiar with the hazards involved.

2. There is ample evidence to indicate that many of the teen-age rocket builders are unaware of the hazardous nature of their projects and are uninformed on various technical aspects of rocketry. Assuming that this interest in the dangerous business of rocketry is actually stimulated by a desire for science education, some state-wide method of communication should be established (preferably within or through the school system) whereby amateurs can get answers to rocket building problems from experts.

3. Until the necessary facilities are available and until thoroughly qualified personnel competent to supervise an amateur rocket program can be provided, it would appear to be in the best interests of the general public to discourage the manufacture and prohibit the launching of rockets by amateurs.

John P. Redmond 1892 - 1957

John P. Redmond, president of the International Association of Fire Fighters, died of a heart attack on December 10 while attending the AFL-CIO Constitutional Convention in Atlantic City. He was 65 years old.

John Redmond was well known to fire fighters and fire service organizations throughout North America. Born in Chicago, he became a member of the Chicago Fire Department in 1923. He advanced through the ranks to Deputy Fire Marshal before being elected head of IAFF. He was a vice president of the Union from 1930 to 1946.

He is succeeded by William D. Buck, who was elected last year as secretary-treasurer. John C. Kabachus, a lieutenant in the Boston, Massachusetts, Fire Department, has been appointed by the Executive Committee to serve as secretary-treasurer.

Bill in Congress

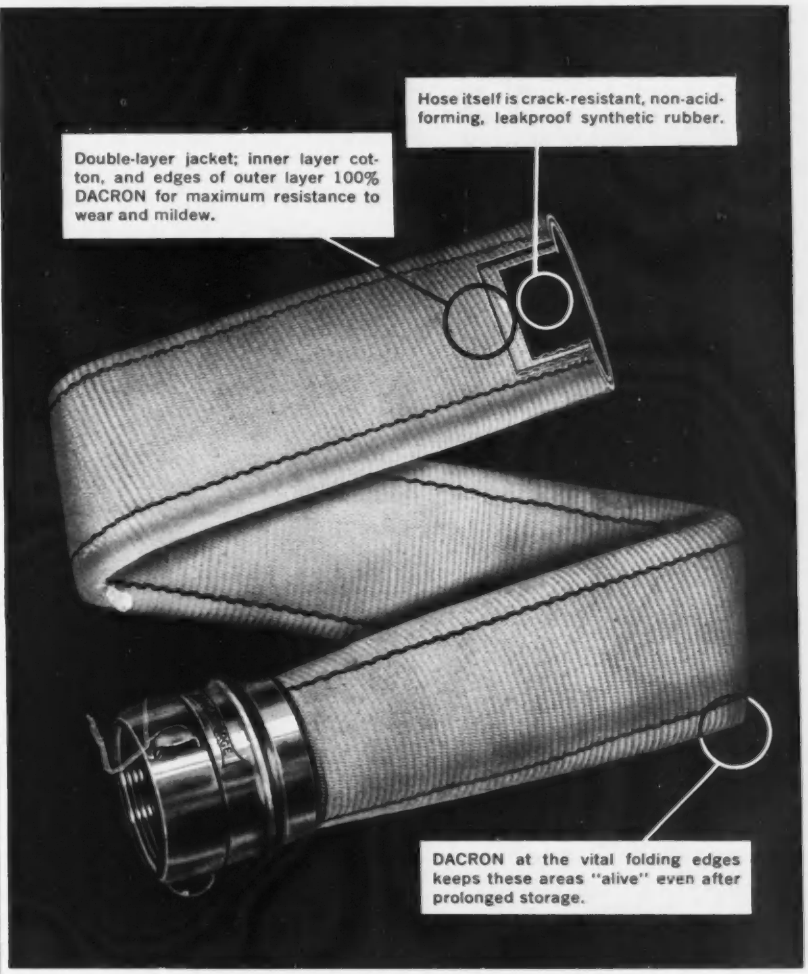
SECRETARY D. M. Kirby, of Point Pleasant Boro Fire Company No. 2, West Point Pleasant, New Jersey, reports that a bill has been prepared for Congress that should be of considerable interest to volunteer fire fighters.

According to his note, HR3406, introduced by Congressman F. Jay Nimtz, a volunteer fireman of Clay Township, Indiana, is designed to amend the Federal Property and Administrative Services Act of 1949 to permit the donation of surplus property to volunteer fire fighter organizations. Readers interested in supporting this bill should write to: Honorable John W. McCormack, chairman, Subcommittee on Durable Property; and Honorable Edwin H. May Jr. and Honorable John E. Moss, members of the Subcommittee, c/o House Office Building, Washington, D. C. According to Secretary Kirby, acknowledgments from the Committee have indicated that the bill has a good chance, but support from county and state volunteer fire fighter organizations is needed.

Folder on Wood Shingles

IF YOU are having trouble with fires due to wooden shingle roofs, you may be interested in a new little folder prepared by the NFPA entitled "An Umbrella for a Shower of Sparks!" The folder points to the long record of conflagrations spread by wooden shingle roofing and urges use of fire retardant roofing as listed by Underwriters' Laboratories, Inc. This folder is available from the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts, at a cost of $2.50 per 100 or $20 per 1,000 copies postpaid.

The folder also points to the importance of keeping a clear space around the house to prevent exposure from grass and forest fires. In some areas fire departments will also want to caution householders on the importance of keeping gutters free of dried leaves and other flammable debris that may readily ignite from sparks which roll off roofing into the gutters. The hazard is particularly severe in areas where wooden gutters are permitted which are subject to prolonged drying in the sun making a nest for firebrands.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Membership Report

BY SEPTEMBER, FIREMEN magazine will complete its 25th year of publication. Back in 1933, the first issue had twelve pages and was distributed free to a number of volunteer fire departments throughout the United States. Since that time the magazine has grown to an average size of about 40 pages, with nearly 30,000 subscribers in the United States and Canada.

This year, larger issues are planned with special, timely articles for the interests of fire fighters in paid, call and volunteer fire departments. Accordingly, it is hoped that chiefs who command departments that have NFPA membership consider obtaining subscriptions to FIREMEN for all of their officers and men. This would be a good time to prepare a list of the men in your fire department who want to receive the magazine at their homes. Cost of each subscription is $2.00 per year, but the names of subscribers must be submitted when the fire department renews NFPA membership.

NFPA Welcomes the following fire departments who recently have joined the National Fire Protection Association. Total membership in NFPA now amounts to 2,406 fire departments with 25,037 fire fighters subscribing to FIREMEN magazine.

British Columbia: West Central Surrey Fire Department, Newton.

California: El Centro Fire Department, El Centro; Weed Volunteer Fire Department, Weed.

Illinois: Bridgeview Volunteer Fire Department, Bridgeview.

Indiana: Crawfordsville Fire Department, Crawfordsville.

Maine: Lucerne-in-Maine Fire Department, Dedham.

Michigan: Lawrence Fire Department, Lawrence; Chief John E. Rogers, Frenchtown Volunteer Fire Department, Monroe.

New Hampshire: Jefferson Fire Department, Jefferson.

New York: Earlville Fire Department, Earlville; Dix Hills Fire Department, Huntington; Shaker-Road-Loudonville Fire Department, Inc., Loudonville 11.

Ohio: Niles Fire Department, Niles.

Ontario: Thorold Protection Hose Company No. 1, Thorold.

Oregon: Chief John Roniero, Gearhart Volunteer Fire Department, Gearhart.

Pennsylvania: Swarthmore Fire and Protective Association, Swarthmore.

Virginia: Orange Volunteer Fire Company, Orange.

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6. Opportunities to participate in the continuous interchange of ideas and experiences of the leaders in the Fire Service Field.

7. Participation in the largest yearly gathering of Fire Officers in the world at our Annual Conference.

8. Opportunities to visit the largest display of fire apparatus and equipment in the world at our Annual Conference.

Apply for your membership today. Take advantage of this valuable source of information and educational material which helps YOU in your work of fire protection, fire prevention and fire fighting. Membership, active or associate, is open to all active fire department chief officers, industrial fire chiefs, fire chiefs of military installations, state and provincial fire marshals.

INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

HEADQUARTERS OFFICE
232 MADISON AVENUE
NEW YORK 16, N.Y.

This space contributed by the National Fire Protection Association

News Items and New Equipment

Photographers' Guide

Fire department photographers might be interested in a new book titled "Good Photography's Darkroom Guide," published by the Arco Publishing Company, 480 Lexington Avenue, New York. Priced at $2.00 per copy, the 144-page book provides information on planning darkrooms, developing negatives, contact printing and enlarging. Other subjects include drying and mounting prints, specialized techniques and other "tricks of the trade."

For a refreshingly new and effective training procedure in your department, look into the Visual Cast system of transparencies projection. Full information from *Robert J. Brady Company*, 3255 M Street, Washington 7, D. C. . . . At the fire or during a drill, your voice will carry clearly with "Giant Voice" portable transistorized megaphone, operating on six standard flashlight batteries. Write to *Antrex Corporation*, 854 North Rochwell St., Chicago 2, Illinois. . . . Reynolds Ink in spray cans is becoming popular with fire departments for identification marking of their own hose, coats, helmets, boots, gloves and other equipment. Write directly to *Reynolds Ink., Inc.*, 4500 Euclid Ave., Cleveland 3, Ohio. . . . *Burgess Battery Company*, Freeport, Illinois, has developed a lightweight, heavy-duty emergency light using two 6-volt batteries and useful as stand-by lighting in the home, industry and for civil defense equipment. . . . "Superseal," a new mildew-resisting, waterproofing material developed by *B. F. Goodrich Co.*, Industrial Products Division, maintains fire hose flexibility in weather conditions that freeze the covers of conventional hose, it is claimed by the manufacturer.

Useful New Catalog

American LaFrance Corporation, Elmira, New York, has published an 84-page, 8½- by 11-in., illustrated book describing its fire department supplies. In addition to including photos and descriptions of fire apparatus, tools, hose, nozzles and extinguishers, the catalog also shows lighting and signaling equipment, firemen's clothing, safety equipment and other useful items. The back portion of the catalog has a number of useful tables on hydraulics and ladders. Copies may be obtained free by writing to the Corporation in Elmira, New York. Ask for Catalog 570 "Fire Department Supplies."

Truck for Bridge Protection

Fire protection for the new five-mile-long Mackinac Bridge in Michigan will be provided by this new FWD specially designed emergency and service truck. The truck will service bridge maintenance needs, will be used for fire fighting, as a tow truck and wrecker with 15-ton pulling capacity, and as a first aid and rescue truck. It has power-proportioned drive to all four wheels, standard five-speed transmission, with top speed of 55 mph. Equipped with two-way radio, it also carries two 30-lb. Ansul dry chemical extinguishers, two 20-lb. CO_2 extinguishers and a 2½-gal. water extinguisher. A 1,000-lb. dry chemical unit with two 50-ft. lengths of 1-in. hose is mounted permanently in the chassis. The truck also carries portable oxygen and acetylene cutting equipment, a 1,000-watt generator, and other fire fighting and rescue equipment.

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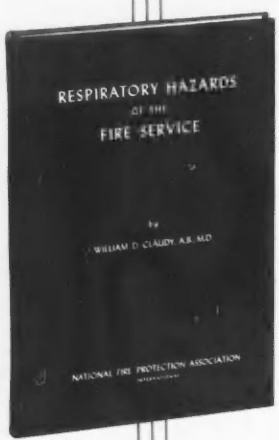

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Dr. Claudy has been a frequent contributor to FIREMEN magazine. Many readers will recall his excellent articles on first aid, artificial respiration, treatment of burns and handling contagious diseases. In this new book Dr. Claudy describes in fireman's language the respiratory hazards that confront fire fighters. About one-third of the book is devoted to the construction, use and maintenance of canister and self-contained masks. Other sections deal with the all-important anatomic and physiologic problems due to smoke inhalation and lack of oxygen, toxic gases, fire fighting procedures and numerous other facts that are extremely important to a fire fighter's well-being.

Copies of this new book will be available on February 1, 1958. To obtain this first edition promptly use the order blank at lower left.

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